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Tribhuvan University
Kirtipur, Nepal**

CNAS

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contributions to nepalese studies

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Dumakhal: A Brief Report on the Excavations

Mohan Prasad Khanal
Theodore Riccardi, Jr.

INTRODUCTION

The report presented here is a very brief statement of some of the chief findings made during the course of excavations in Dumakhal, a small village northeast of Kathmandu. A more extensive statement is now in preparation and will be published later.

The work was begun in January, 1984. After an interruption due to the monsoon, work resumed in October, 1984, and continued into May, 1985.

It should be noted here that Dumakhal was chosen because of the surface evidence that had accumulated over a number of years and because it was clear to any observer that the village contained ruins that warranted investigation. The relative isolation of Dumakhal from the urban turmoil of the major cities of the Kathmandu Valley also supported the possibility that the site had remained relatively undisturbed in recent times. The excavation therefore was carried out for what may be called broadly archaeological reasons. It was not geared to the search for corroborative evidence for any aspect of the history of Nepal as it has been preserved in literary form in texts and inscriptions. This report is therefore tied to no preconceived notions concerning the early history of Nepal, and it makes no claims to a fixed chronology beyond what is most clearly supported by the material evidence. The bulk of the evidence indicates that Dumakhal contains important remains from the pre-Licchavi period. In the absence of adequate chronological data, it is difficult to date the site more precisely. Samples for carbon-14 dating were sent to the Physical Research Laboratory, Ahmedabad and Beta Analytic, Florida, USA. Recent preliminary results indicate only that the first strata is datable to the 14th century A.D. and the third strata to the sixth century A.D. It is hoped also that further excavations will produce the additional evidence needed to make what is tentatively postulated here more certain.

THE SITE

Dumakhal (Nep. Dumakhal) is a small Brahman village that lies on the west bank of the Manohara River at long. 85.25° and lat. 27.43°. It is about ten kilometers from the centre of Kathmandu. It is accessible by a dirt road that leaves the main pitched road between Kathmandu and Sankhu just after the Gokarna forest.

As it exists today, the modern village of Dumakhal is indistinguishable from many other villages in the Kathmandu Valley, and its age, judging from the oldest surface structures, is probably no more than two or three hundred years. Many houses are of sun dried brick with thatched roofs. Some new buildings of modern brick have also been recently constructed, but some, however, are clearly built with old bricks uncovered in the fields.

Historical references to the village are uncertain at best. An inscription at Changu Narayan, mentions a place called *domma*, and elsewhere the word *dommakhara* appears. Whether these refer to Dumakhal or not is not known, but they may, considering the proximity of the inscriptions to the site.

Judging from the surface evidence, the village appears to contain extensive ruins. Whether they are the remains of a large religious complex or the ruins of an ancient town or village has not been ascertained. The placement of the ruins may eventually provide a clue as to their nature, for they lie near a number of important sites, and not far from the major trade routes north to Tibet, including the road from Patan to Sankhu via Thimi. The site lies directly to the west of the temple of Changu Narayan, one of the oldest religious shrines in the Kathmandu Valley. To the south of Changu, along the crest of the ridge, is the modern village of Duvakot. This town also appears to contain ruins, though they are far less extensive than those of Dumakhal, and the surface evidence to date is far less interesting. Farther south is the temple of Nilbarahi. Although this temple is of later date than that of Changu Narayan, it appears to have a history that may date it to Licchavi times. To the west of Dumakhal is the forest of Gokarna and the village of the same name. In the chronicles, the Gokarna forest is said to have housed the Kiratas after their defeat by the Licchavis. There is, however, no supporting evidence for this. In the village of Gokarna, now housed near the main temple, there is a fragment of a Licchavi inscription that may indicate the importance of the site in ancient times. Dumakhal thus appears to be one of a number of ancient sites in this area of the valley.

A land survey of the site was not possible, but examination of the village indicates that the ruins may be spread throughout the settled area and the cultivated fields as well, and extend beyond it to the north, west, and south. In the east they appear to come close to the bed of the Manohara.

THE EXCAVATION

The excavation site chosen is a plot of land on the side of a cultivated land terrace just west of the Manohara and directly opposite the Changu Narayan hill. It is a few meters south and west of a small shrine to the goddess of the village, Dumadevi. The excavation measured

twenty-seven by eighteen meters. A grid was prepared, the trenches of which each measured approximately six by eight and one-half meters. Sections taken just below the excavation revealed extensive pottery and brick rubble. Above it, extensive brick walls, pottery, and other artifacts were clearly visible. While our excavations were in progress, exploratory but extremely harmful digging by some local farmers in the fields above revealed the remains of brick structures below the thin top soil to a depth of approximately four feet. The structures uncovered by the excavation are clearly part of this complex of walls, floors, foundations, and other structures that still lie just below the surface.

GEOLOGY

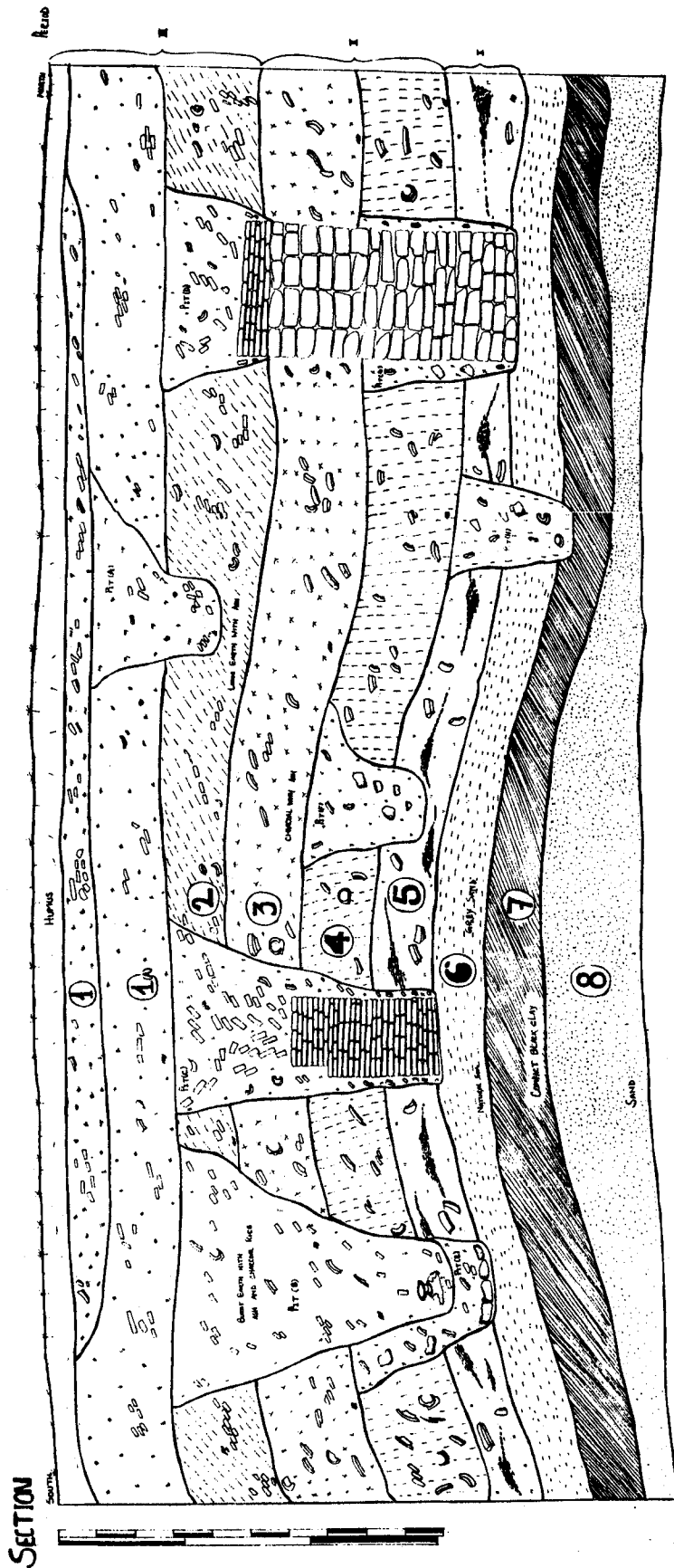
The geology of the Kathmandu Valley is still imperfectly known, and its relation to archaeology even less so. An important early survey was done by R.V. Joshi in 1961, in which he supports the general opinion that the Valley appears to contain deposits that represent water-laid sediments like those formed in quiet waters such as lake basins. The alluvium is deep, in places reaching a depth of more than 200-350 meters. Joshi notes that the two rivers, the Bagmati and the Manohara, cut through this alluvium, forming terraces, two of which have major areal expanse and support a large number of villages located on them. He also undertook a brief survey of the cliff-sections uncovered by these rivers as well as the deposits from them in the river beds. Though his search for prehistoric remains did not prove fruitful, he was of the opinion that the "gravel in the river beds is made up of a mixture of sub-angular and rolled rocks of granite, granite-gneiss, schistose rocks, pegmatites and vein quartz," "all of which, he claims, except for the schistose rocks, is suitable for tool manufacture. Radiocarbon dates of peat-samples from naturally exposed road-cutting on the way to Sankhu, not far from Gokarna and Dumakhali, were found to be 29115 ⁺³²²⁰ 29960 ⁺³³¹⁵ years B.P., indicating that the peat samples are of late Pleistocene age.

The areas excavated at Dumakhali conforms generally to the geology as outlined by Joshi,

STRATIGRAPHY

The excavations reached a depth of three hundred seventy-two centimeters, at which point untouched soil was reached. Eight strata were distinguished, which varied from a minimum of sixteen centimeters to a maximum of seventy-two. They are as follows:

DUMAKHAL KATHIRIYIL - 1981-1985



<u>Strata</u>	<u>Soil Composition</u>
1.	light brown earth mixed with some black soil
2.	light black soil
3.	light grey soil
4.	mixed grey sand and soil
5.	gravel with mixed grey soil and sand
6.	whitish grey sand (lacustrine soil)
7.	black clay
8.	sand

Archaeological evidence was found through the first five strata. Strata 6, 7, and 8, appear to have little archaeological importance at this point, though future excavations should go deeper in order to insure that no archaeological evidence has been missed.

THE STRUCTURES

Immediately below the topsoil, after a few hours of activity, the outline of brick walls began to emerge. When the excavation was terminated, they measured 6.90 cm in length, 64 cm in height, and 60 cm in width. They were clearly part of the structures that extended north below the ground into the side of the hill and those that were revealed by the peasants in the fields above. This wall terminated to the south in 140 cm in C. Below it, parallel to it, and approximately 2.66 cm to the west, was revealed a stone wall, built without mortar, and approximately one meter in height and 80 cm in width. The excavated portion of this wall extended from C to I, but its outline can be seen to extend for several feet until it disappears into the side of the terraced field.

D, E, and F contained a large number of bricks and brickbats that represent possibly the upper portions of the brick wall before their collapse. The stone wall may have been higher than at present also, since some large stones were found in the areas in front of it. It also may have been part of an area to the south of it that contains the remains of large stone structures.

At the lowest level of A and B appeared a structure of the greatest interest. The structure consists of a circle of large stones, about two meters in diameter, in which there was placed a rectangle

of stones. Its exact nature is unknown, and its resemblance to megalithic burials elsewhere may be purely formal and fortuitous. Unfortunately, because of the early onset of the monsoon in May, 1985, the excavation had to be closed before the structure could be examined.

BUILDING MATERIALS

The main building materials found were brick and stone. Bricks varied in size throughout the excavation. They were in general of good quality, but none was of fine manufacture. None is inscribed or decorated. The average size is 22x9x6 cms. A few bricks that were wedge-shaped were found in layer five of D. They may have been made for window trim or possibly to fit around the eaves. All bricks found were kiln baked.

Roof tiles and their fragments were found in considerable numbers, indicating that the roofs were tiled and not thatched.

The stone used in the structures uncovered is not uniform in size, but consists of pieces cut roughly to fit together. Other large stones have been found in strata 2, 3, and 4, and are not readily associable with the structures. They may have formed part of buildings or other structures associated with the stone circle in C.

ORGANIC REMAINS

The organic remains found in the excavation represent some of the most interesting material uncovered, but because of their specialized nature a full statement is not possible at this time.

The southern portions of the excavation appeared to contain most of the organic remains. These were found mostly in 2nd and 3rd in strata. Animal remains include both bones and teeth. Rice grains, both charred and uncharred, were found.

Throughout the excavation, large amounts of charcoal were found. Whether any of this represents the remains of wooden structures or parts of structures is impossible to say at this time. What appear to be post holes were found in strata 1st, but they conformed to no discernible pattern.

SCULPTURE

To date no public or large size sculpture has been found in the excavation. This may support the notion that the excavation lies at the periphery of the site. What has been found are fragmentary figures and many small votive terracotta figures. Among these the following should be mentioned:

- (1) a small (ht. five inches) male figure, headless and footless, presumably a rider of some animal, considering the figure's posture. He is wearing boots, is covered at the loins, and is bare chested except for the sacred thread running across his shoulder. He may

have held a flag or some other object in his right hand. He is wearing bracelets and a necklace. The figure is beautifully modelled. It was found at a depth of 190 c meters in G. (Pl. 9).

Another example of this same figure, identical to it in almost every detail, is in the collection of the Los Angeles Country Museum (Pal, p. 89). This figure, found at Dhumbarahi by Mary Slusser, was originally published by her in *Nepal Mandala* (Vol. II, Fig. 441). It is dated to the seventh or eighth century by Pal and Slusser, though they do not make clear their reasons for doing so.

- (2) the broken fragment of a male figure, possibly an archer. His foot wear and clothing resemble the style of early periods of Indian sculpture, possibly the Sunga period. (Pl. 10).
- (3) a human figure with fly-whisk. The figure has lost much of its detail, but it was of high quality. The face and headdress are almost totally obliterated, but the ear ornamentation and necklace are still visible. (Pl. 11).
- (4) two terra-cotta human heads.
- (5) animal figures include a bull of clay, with red slip typical of Licchavi pottery, This and the other animal figures were made with a double mould. (Pl. 12).
- (6) an animal head, a crude figure unlike the well-modelled figures mentioned above. The eyes are simple incised circles. There is no attempt at modelling the figure. The fragment was covered with a red slip.
- (7) a Buddhist votive seal with inscription in Licchavi or Gupta characters. In the top half in the center is the figure of the Buddha inside a stupa that is topped with harmika and three umbrellas. Around this central figures are four small votive stupas. The lower portion contains an inscription hitherto unread, presumably one of the common Buddhist sacred formulas.

POTTERY

Pottery found at Dumakhal is of the historic period. No decorated painted ware and other types of pottery associated with prehistoric contexts were found. The types of vessels represented are utilitarian and the pottery shows little fine or luxury ware. The pottery appears to be entirely Nepalese in production, and there are no apparent imports from elsewhere.

The main types of pottery are the following: 1) a red slip ware of various thicknesses; 2) a black ware, some of which shows fine striations on the inside, many of which come together at right angles; 3) a black polished ware that may be related to some of the pottery found by Corvinus in the Gokarna-Dumakhal area and by Allchin at Lagankhel; 4) a distinctive

type of grey ware, not to be confused with the grey ware found at Histinapura; 5) an yellow ware with red slip though in very small amounts.

STAMPED POTTERY

What is of special interest is a number of sherds that bear stamped designs that may act as decorations or as stamps that may have special meaning or both. The number of such stamps discovered so far is well over one hundred. Some of them are remarkable for their beauty and skill of execution. Although most of them are drawn from the common stock of designs found in the subcontinent, they are distinctly Nepalese and so far appear not to be direct copies of those found elsewhere. No seal itself was uncovered by which the stamps were impressed, but on the reverse of the stamped sherds the finger print and nail mark of the potter or potter's assistant is clearly visible, indicating that the stamp was often held against the wet clay between thumb and forefinger.

The designs are variously shaped: circular, rectangular, semi-circle, and diamond. They include rosettes, wheels, birds, the *srivatas*, trees, and what appears to be a nine-headed serpent. Many of the designs appear to have some signification beyond their decorative value. The chief reason for this surmise is that they are often found in unlikely places for designs, often on the inside or top of the lip, or placed very closely together on the side, and in numbers far too few for the common design patterns of the time, which often circle the entire vessel.

Two stamps appear to match Licchavi coins very closely. The first is the humped bull. The stamp is almost identical to the so-called *pasupati* series of coins, so common in the Licchavi period (Pl. 13). These copper coins come in a large variety of detail, but none is dated or bears the name of any king. They therefore contribute no precise dates except the general assignment to the Licchavi period. A second stamp appears to bear the lion found on the so-called *mananka* coins. This is less clear, however.

Though stamped pottery has not been found at any other site in Nepal in the quantity and variety that it has been at Dumakhal, fragments have been found and are reported to be at present in the collections in the Department of Archaeology in Kathmandu and in the National Museum. The authors also found surface examples at Dhumbarahi, though some of the stamps found there were not as skillfully executed.

The stamps are not confined to any particular ware, though they are most numerous on the red and black wares. Most of the stamped sherds were found in D and E in strata 2-4, with a few examples found in A, B, F, and I.

The connections between this stamped pottery and similar pottery found in the Indian subcontinent must be examined in depth. Preliminary examination of pottery in India held in the national collections in Purana Qila, New Delhi, and conversations with archaeologists at the

Archaeological Survey of India, indicate connections with the pottery of Ahicchatra and other sites of northern India, particularly of the Kushan period. It must be emphasized strongly here that the connection between pottery of Dumakhal and that of the Kushan period in various sites of northern India has no immediate chronological significance. Stamped pottery, it is generally believed, was an import into the Indian subcontinent from abroad, possibly through the eastern Mediterranean or possibly through the Greek and Roman-influenced northwest and thence through the Saka-Parthians and the Kushans into the plains of India. When the practice entered Nepal is impossible to say. What must be recognized, however, is what G.R. Sharma has called the "strong ceramic bond" that knit together much of the civilization of ancient northern India. This bond may have included sites like the Kathmandu Valley.

INSCRIBED POTTERY

An important piece of pottery is a black fragment that bears an inscription, or part of one, that at present is not decipherable with certainty. The script is not known before in Nepal, but it appears to be related to scripts found there and elsewhere in the subcontinent. It appears to be a graffito and not a formal inscription, perhaps a potter's notation.

COINS

The excavation has not yielded a large number of coins. Only two were found, both of the Licchavi period. One is a coin of the *pasupati* series, found on the surface. The other is a *mananka* found in stratum 1D. The coin is easily recognizable but is not in good condition. No Malla or Shah coins have been found.

GLASS OBJECTS

A number of glass bangle fragments were found in the excavation. All are polychromed and appear to be of early manufacture and design. There are two main varieties: flat pieces of two colors of plain design, and pieces about half a centimeter in width in which stripes and or dots of various colors are placed against a monochrome background. In some of these the edges are raised. The colors are brilliant and include yellow, blue, red, ochre, and maroon.

METAL OBJECTS

Metal objects are of bronze and iron. The bronze objects consist of a few fragments of what appear to be the remains of bowls or water pots. Some appear to be polished.

The remaining objects are made of iron. They consist of hooks, an arrowhead, some intertwined rings, and a long thin piece that may have been a nail.

A few remaining objects are not recognizable because of their poor condition.

STONE OBJECTS

To date, no recognizable tools of the prehistoric period have been found in the excavation, despite reported finds on the surface of neolithic celts and axes of possibly the paleolithic period.

A variety of stone implements were found that may bear the marks of human use. These include several pieces of quartz and several smoothed stones that may have been used as household implements including what appears to be a ringstone.

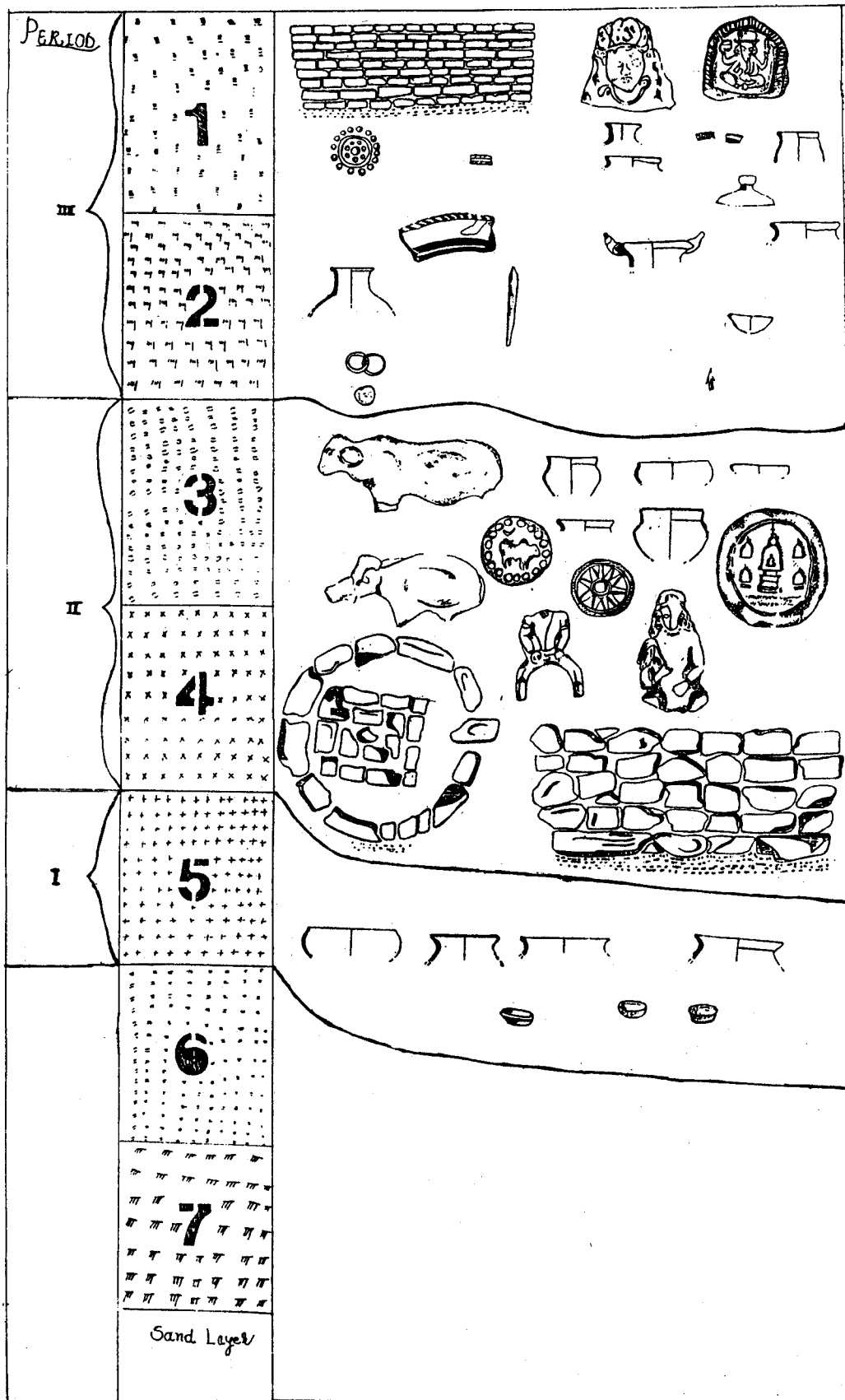
CONCLUSIONS

Some preliminary conclusions may be drawn from the above material. Because of the small size of the trench, however, their tentative nature cannot be overemphasized.

- (1) the exact nature of the ruins at Dumakhal is at present unknown and can only be ascertained through further excavation;
- (2) the site uncovered so far appears to be of the Licchavi period, though determining the chronology more finely is difficult without further excavation;
- (3) no tools or prehistoric contexts have been found in the trench. This leaves open still the question of the relation of the surface finds to the site, and the c-14 tests done previously by Watanabe;
- (4) all pottery found appears to be of the historic period, some of it bearing similarities to pottery of the Kushan period at various sites in northern India;
- (5) the artifacts bear a close relationship to finds at Hādigaon and Dhumbarahi.

Finally, it must be stated that the trench at Dumakhal is one of only three systematic investigations undertaken in the Kathmandu Valley. Because of the enormous urban growth that has taken over the Valley, and the increasing pressure on the farmers to till more and more land, the opportunities for archaeological work have dwindled substantially in the last twenty years. Only a broadened program of archaeology, both of excavation, salvage, and preservation, will allow us to reveal the true nature and extent of the Nepalese cultural heritage.

DUMAKHAL CULTURAL SEQUENCE



SELECT EXAMPLES

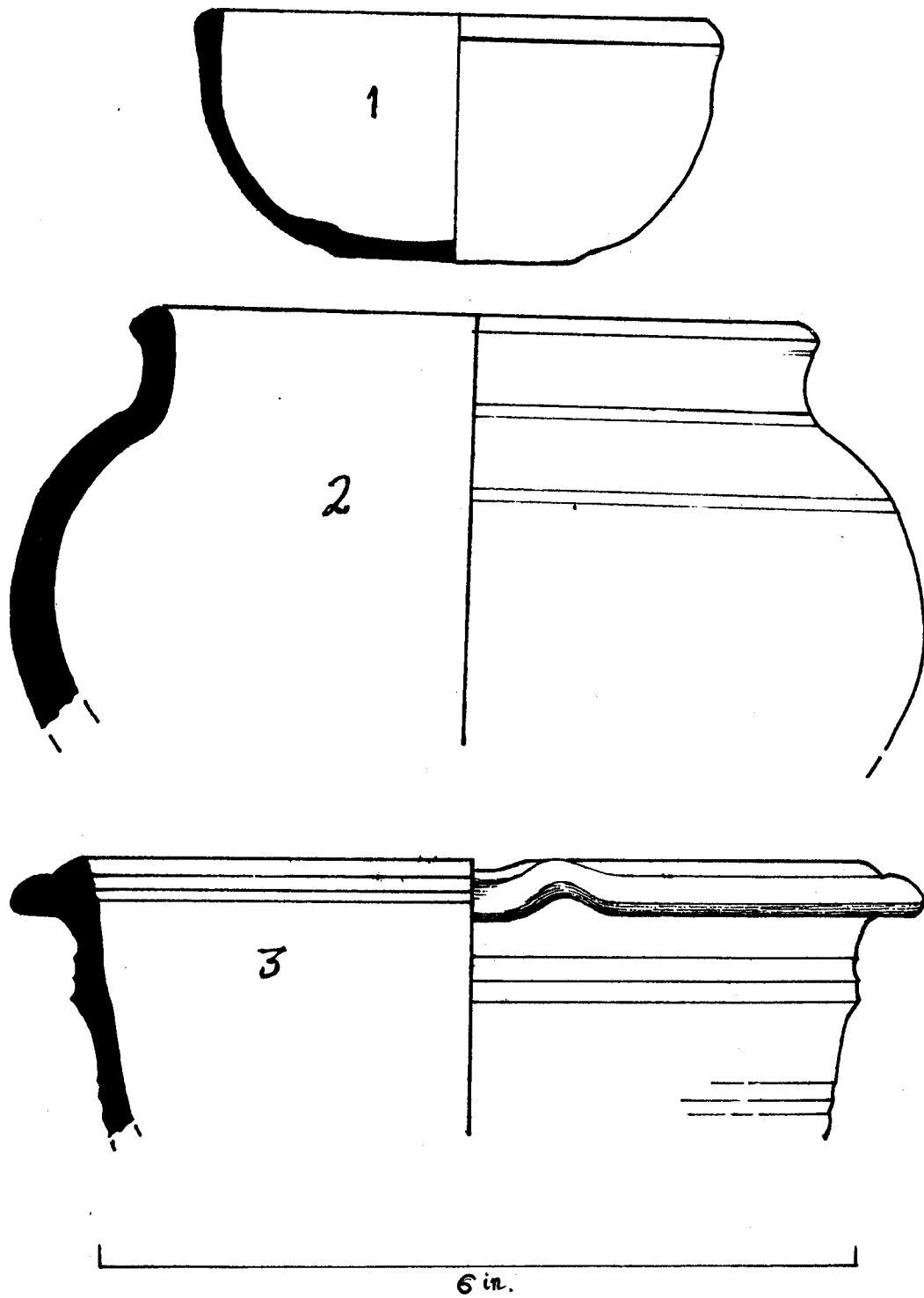
A representative collection of potsherds from the various periods of the Dumakhali culture is here illustrated; an exhaustive classification will be published in the final report.

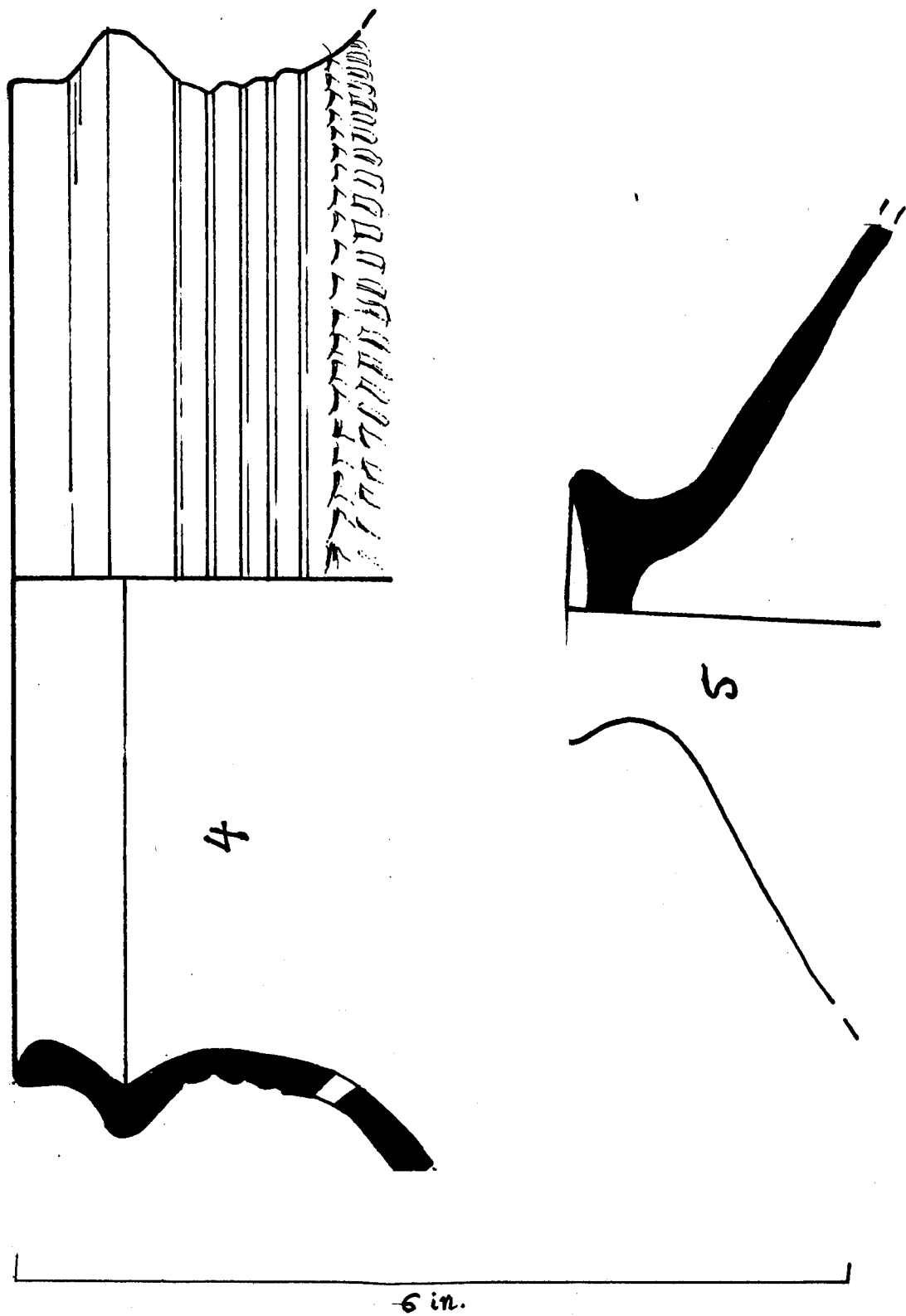
1. Bowl of buff ware with sharpened and slightly everted rim and flattened base; from stratum II of period III.
2. Vessel of brownish red ware with everted rim and boldly grooved shoulder from stratum III of period II.
3. Fragment of a unique long-necked vessel jar of red slip ware; from stratum III of period II.
4. Fragment of a vessel of red ware with oblique incisions on the shoulder; from a stratum III of period II.
5. Fragment of a lid of brownish red ware with external knob; from a stratum IV of period II.
6. Fragment of a carinated dish of red ware; from stratum I of period III.
7. Fragment of a vessel of grey ware with incurved thickened rim; from stratum III of period II.
8. Fragment of a flat base and rimless basin of buff ware; from a pit contemporary with a late level or stratum II of period III.

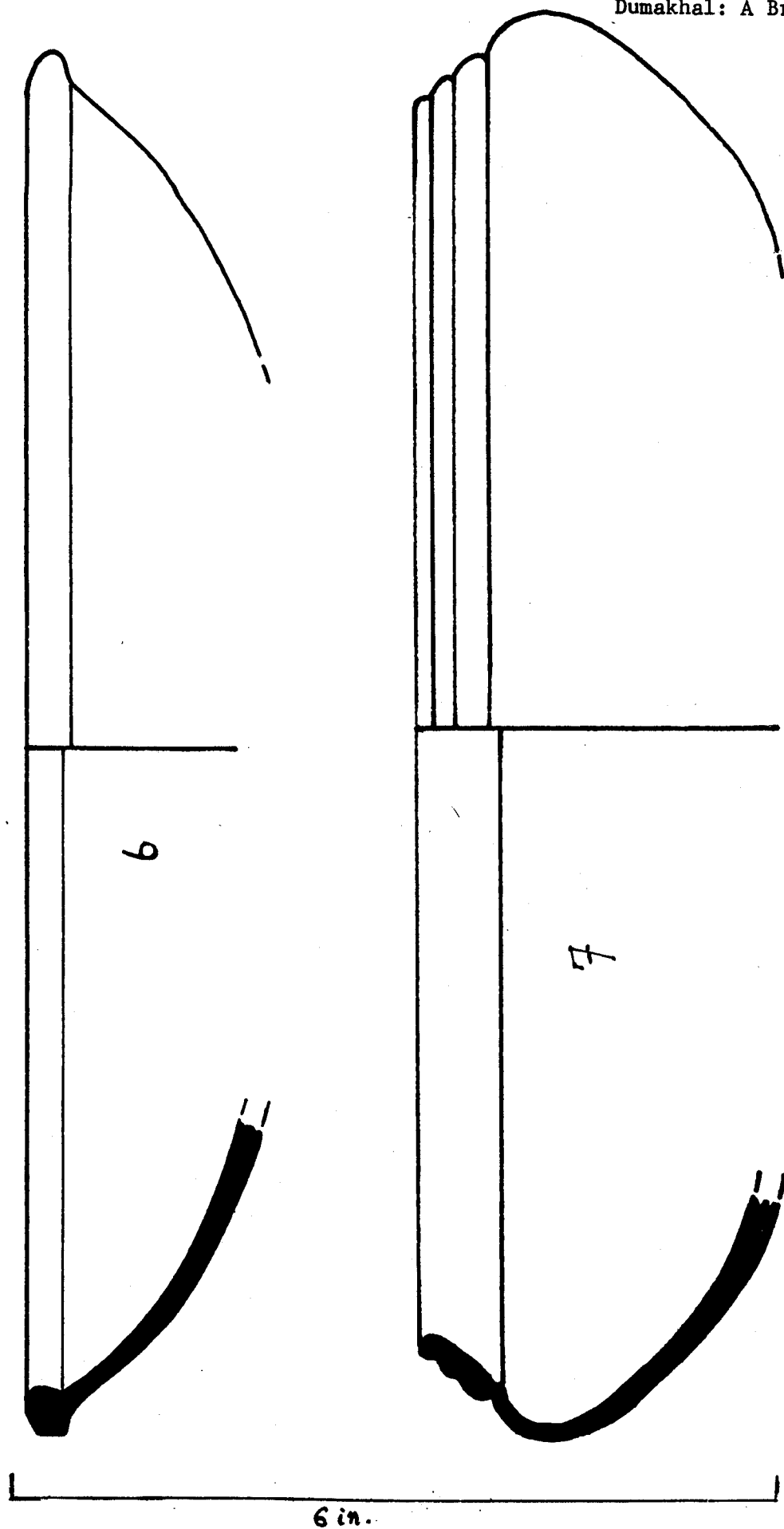
DECORATED POTTERY

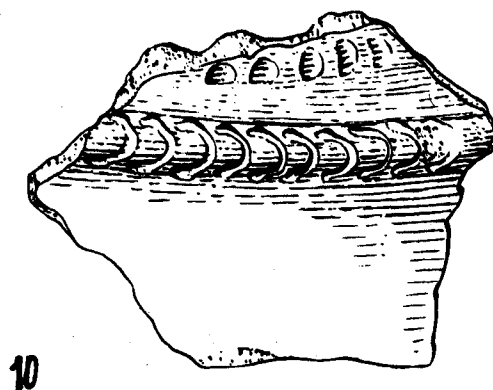
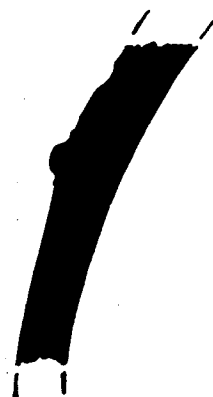
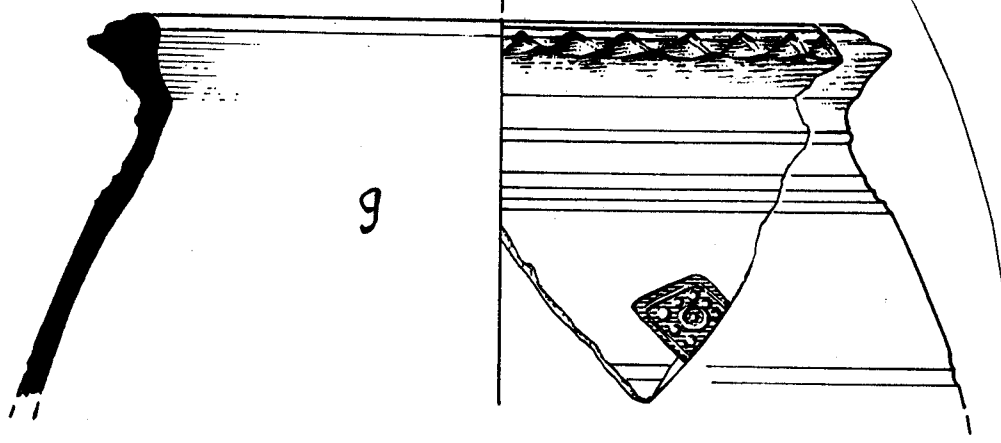
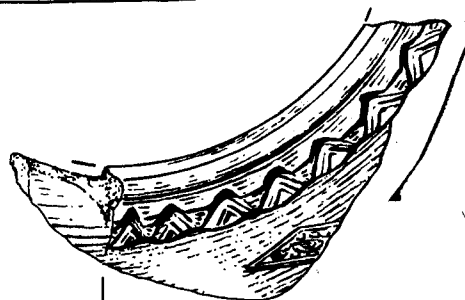
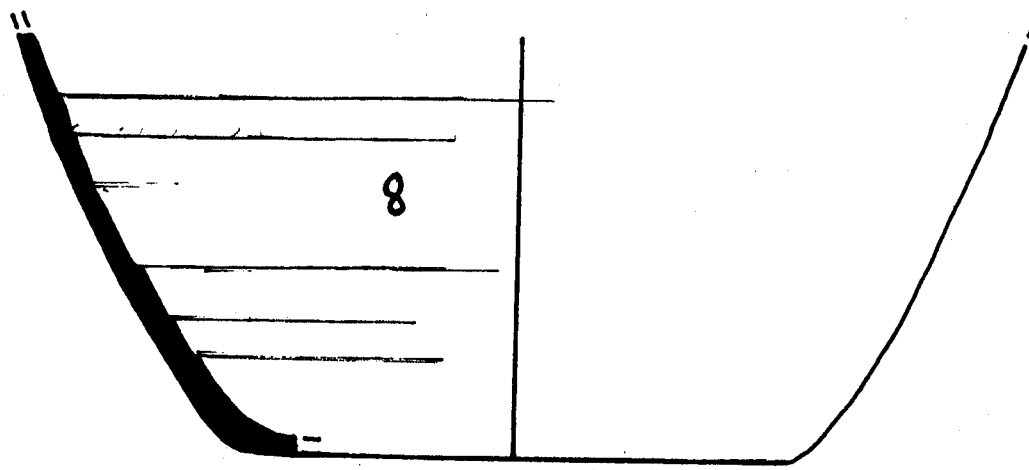
A number of decorated potsherds carrying incised, stamped and applied designs have been found, but only a few are described here.

9. Red-slipped vessel-fragment decorated with a stamp pattern over a twisted-cord design in applique, from a stratum III of period II.
10. Red ware sherd with applied bands bearing finger-tip and rope patterns; from a stratum III of period II.









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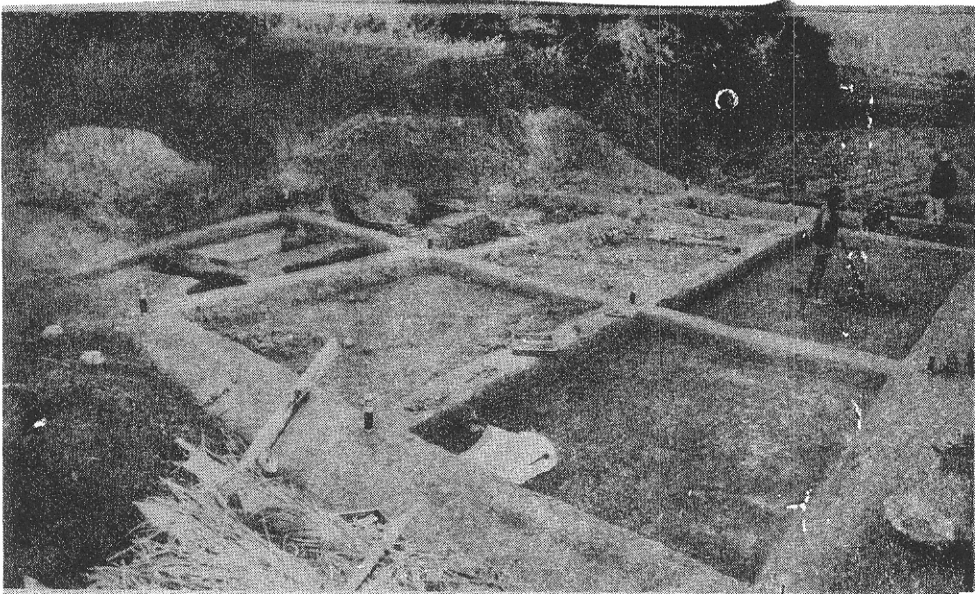


Plate I: General View, Archaeological Site at Dumakhal, looking northwest.

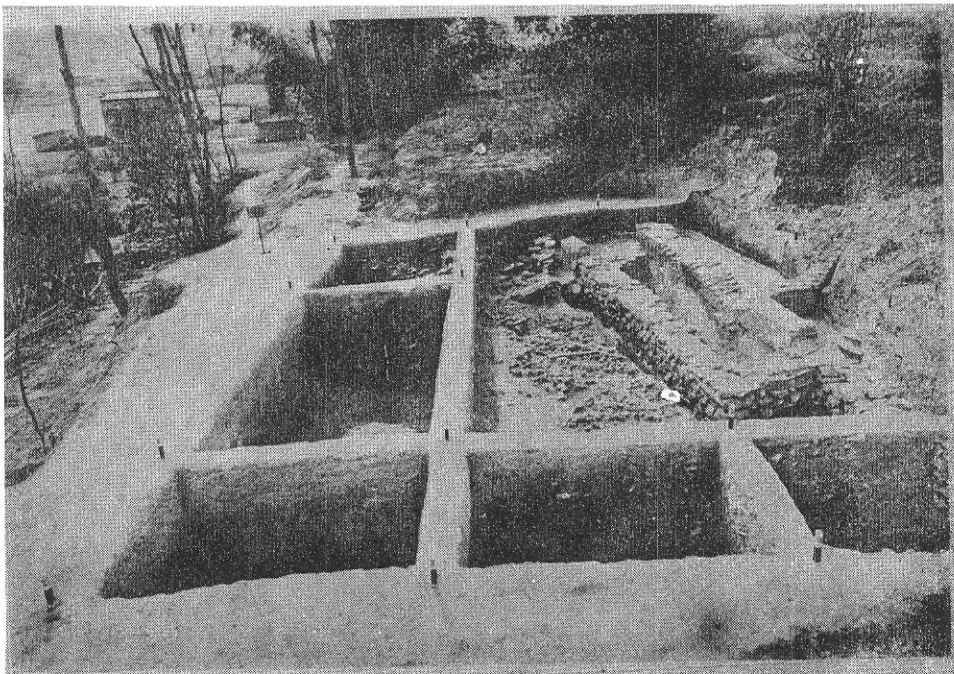


Plate II: General View of Structures and Pits, Looking South.

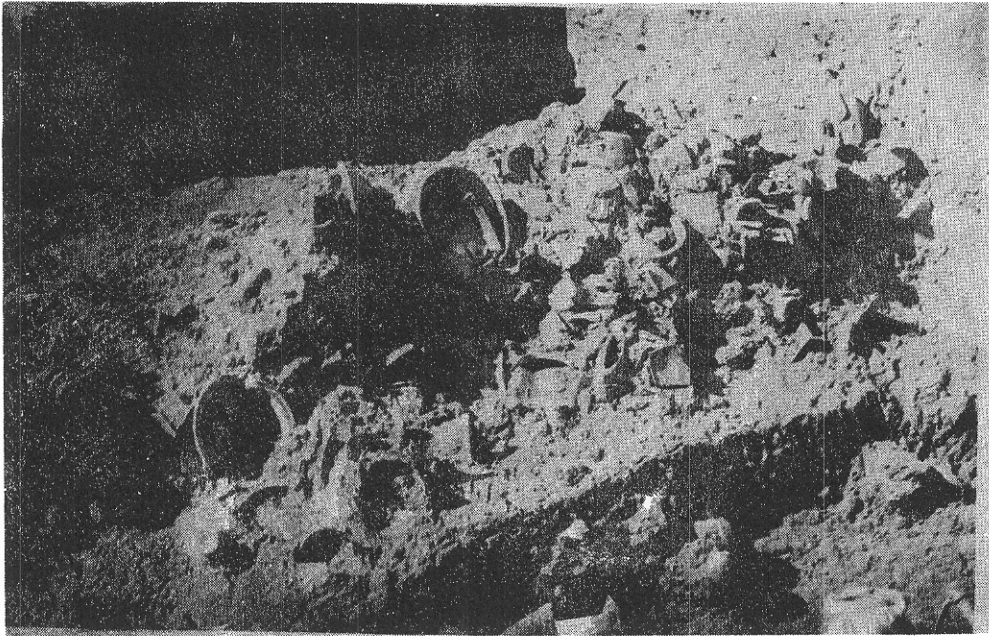


Plate III: Pottery and Other Debris (Trench E).

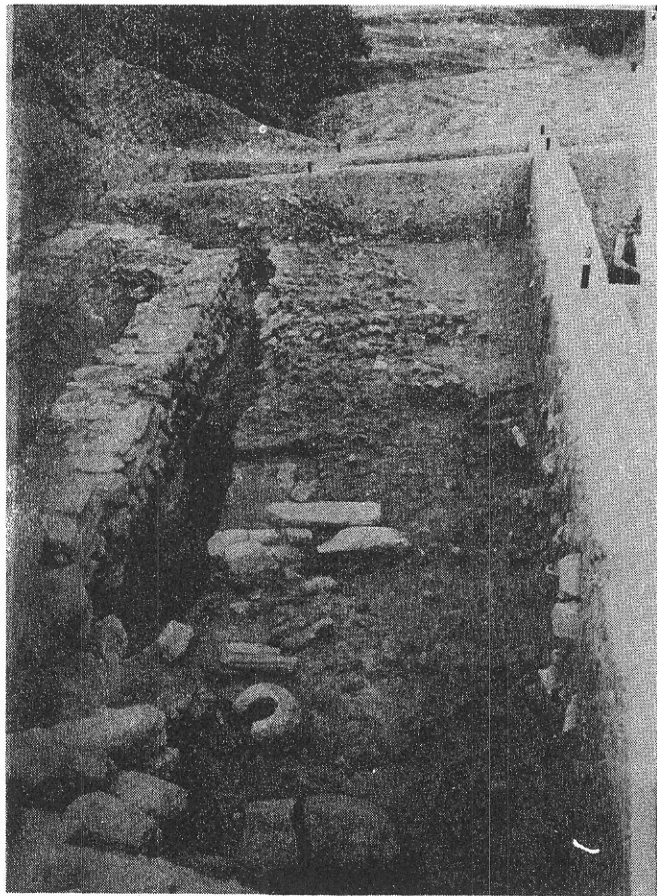


Plate IV: Flooring and Walls, Looking Nort

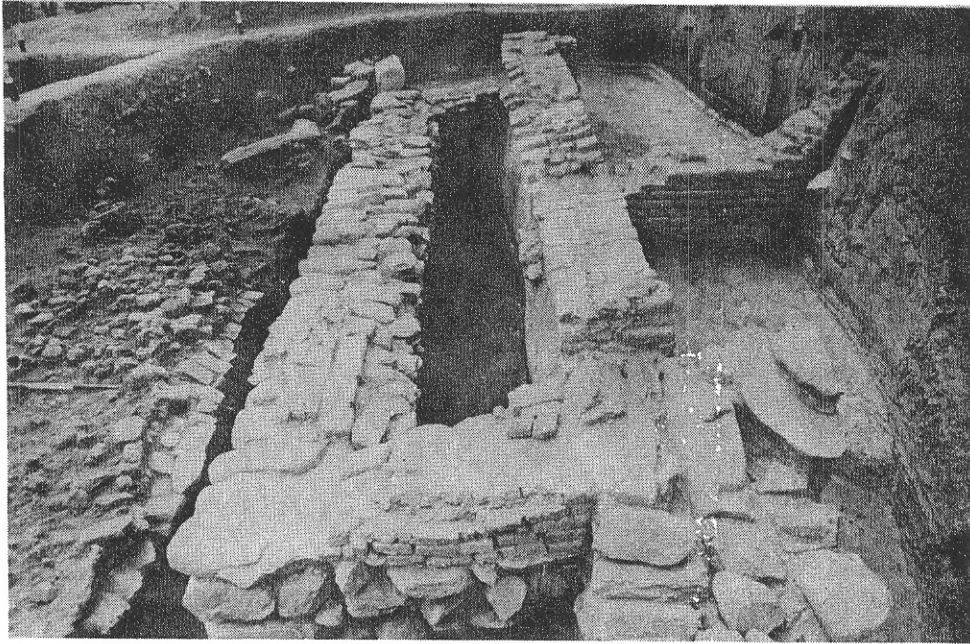


Plate V: Exposed Floor and Walls.

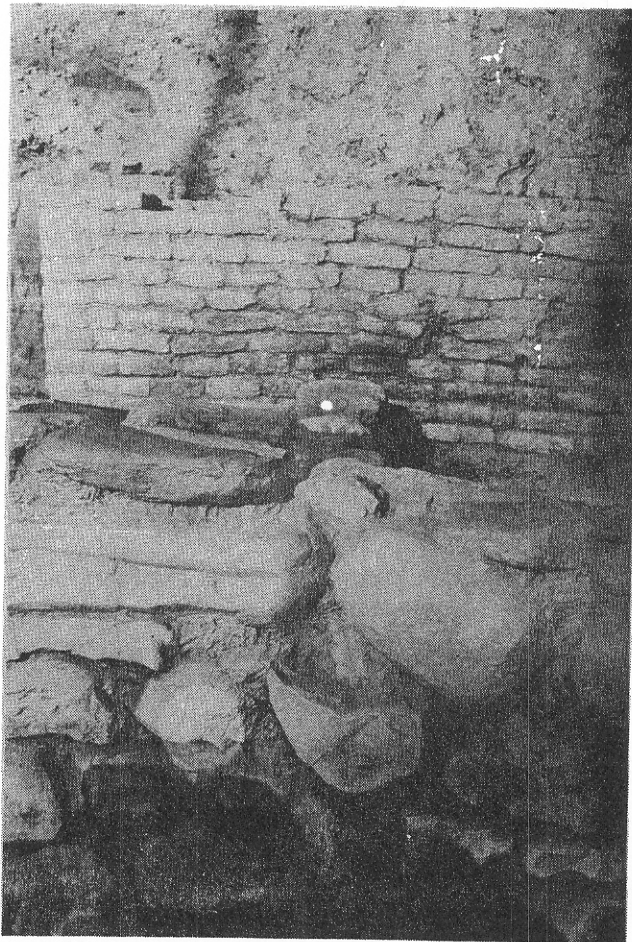


Plate VI: Exposed Brick and Stone Walls.

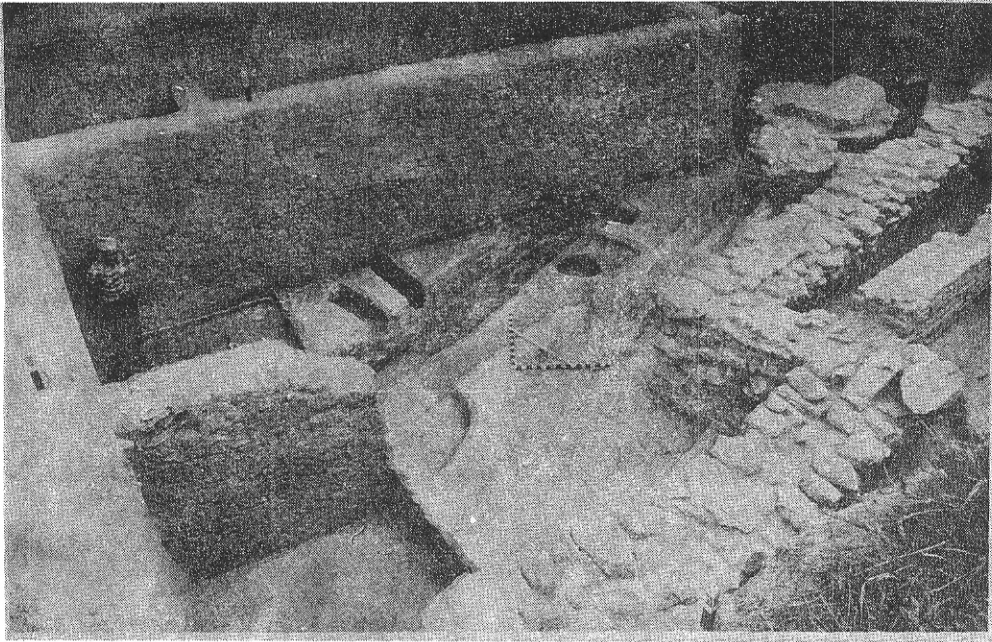


Plate VII: General View of Flooring, Structures, Sections,
and Cairn Circle.

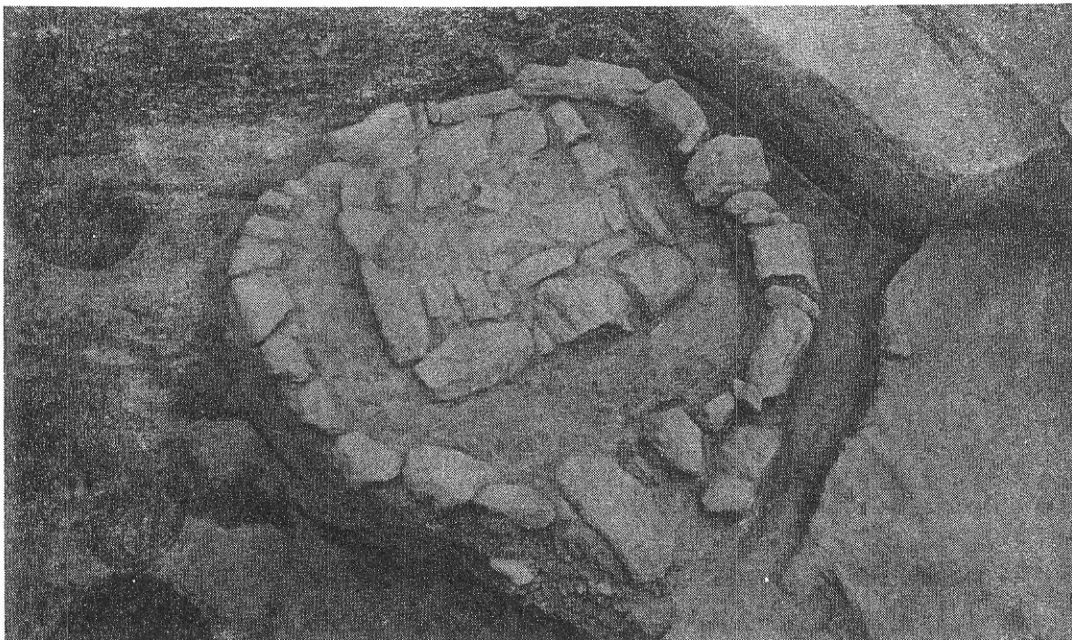


Plate VIII: Cairn Circle.

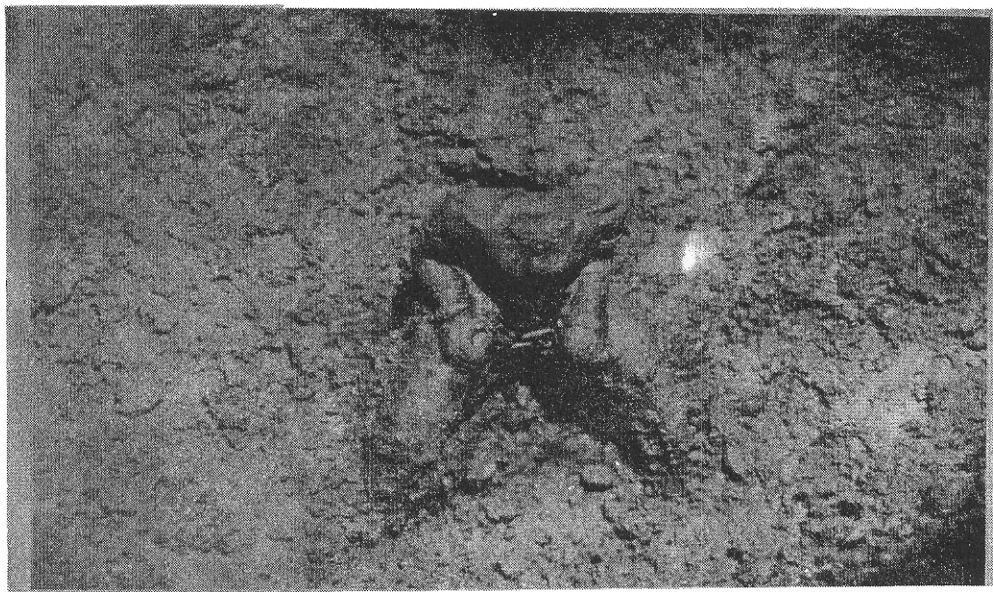


Plate IX: Terracotta Male Figure.



Plate X: Terracotta Figure.

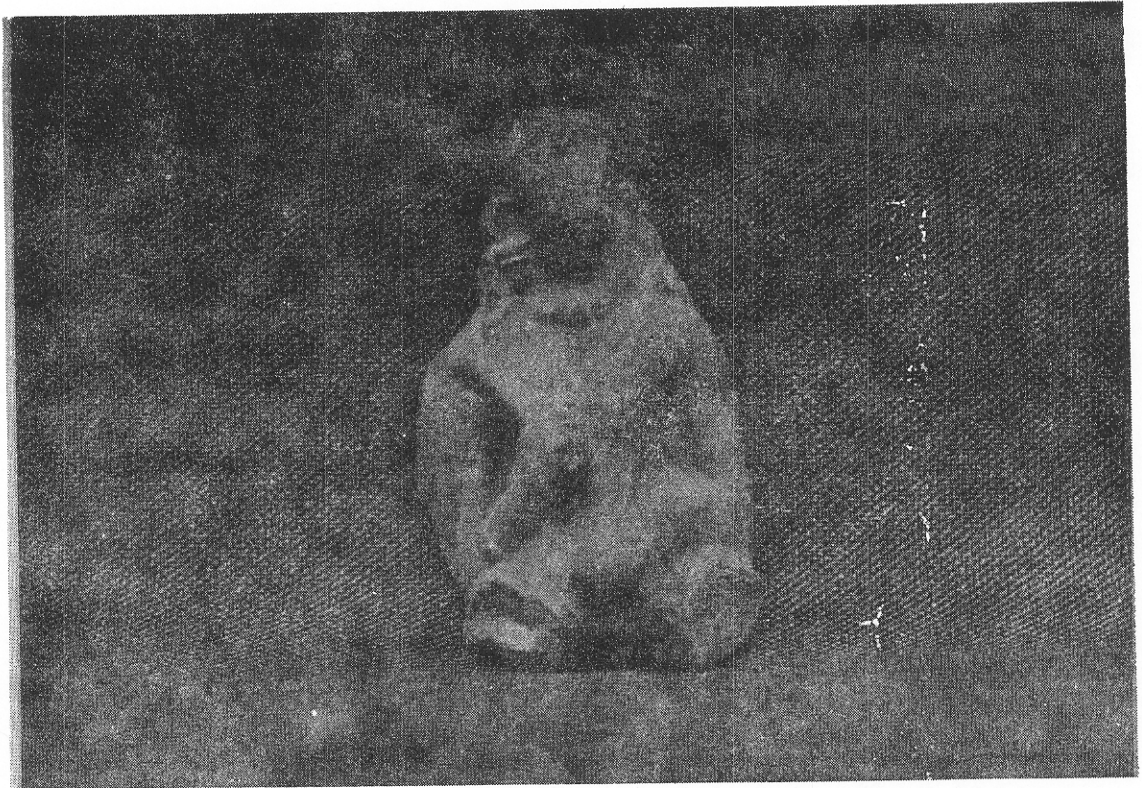


Plate XI: Terracotta Male Figure.



Plate XII: Terracotta Animal (Bull) Figure.

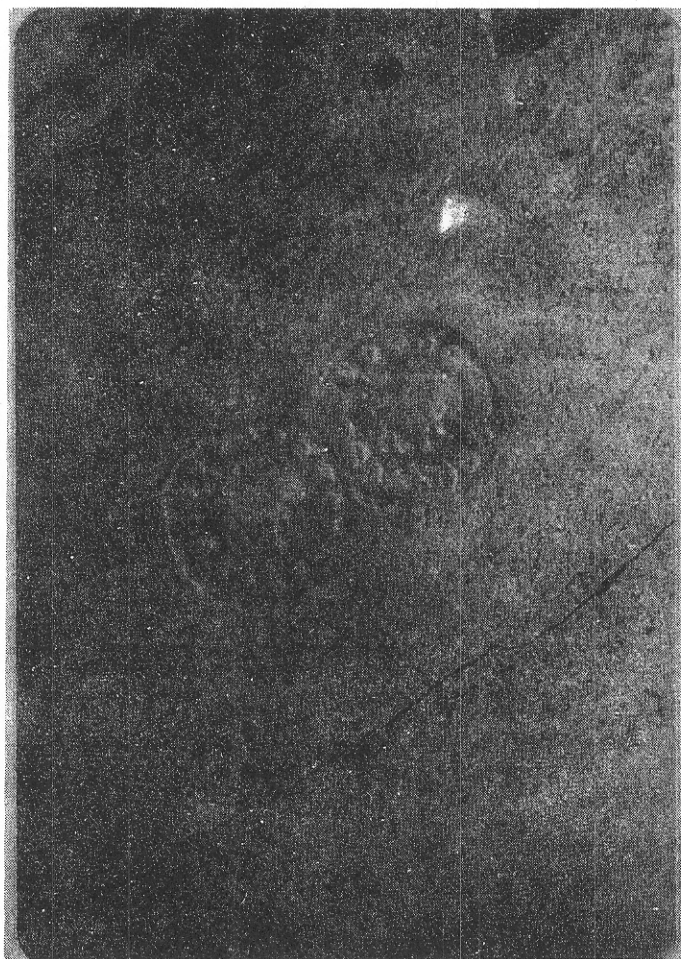


Plate XIII: Pottery Stamps (Pashupati Royal Sealings).

The Sherpas Transformed: Towards A Power-Centred View of Change in the Khumbu

John Draper

INTRODUCTION

"Listen, O Lord of the meeting rivers. Things standing shall fall but the moving ever shall stay." ----- Basavanna

The overthrow of the isolationist Rana regime in Kathmandu in 1951 and the Chinese annexation of Tibet in 1959 signalled significant socio-cultural, political and economic changes for communities throughout the high Himalayas of Nepal. For the Sherpas of Khumbu, in N.E. Nepal, such changes were compounded by the advent of mountaineering and subsequent mass tourism in the mid 1960's. In 1984 von Furer-Haimendorf published an account of these changes, based on over 30 years of contact with the Sherpas. In good structural-functionalist tradition, von Furer-Haimendorf focuses attention on what he calls the "transformation" of Sherpa culture and society, from one of harmony and equilibrium to one of conflict and disintegration. It is a personal and sensitive account; but it is also a sad and somewhat simplistic one. The diachronic perspective which such a "re-study" promises is betrayed by the portrayal of an idealised, static past and a future clouded in passivity and pessimism.

In this paper I shall present the case for a more optimistic, power-centred view of change in the Khumbu, based on my recent fieldwork in the village of Thame.¹ In so doing, I also offer a critical review of von Furer-Haimendorf's approach to change. Sherpas are not, I suggest, merely passive victims of change. Far from losing, or rejecting their culture and identity, Sherpas are actively engaged in reconstructing it. A process of "consolidation" is occurring, I suggest, alongside that of "transformation"; is a historically ongoing, perhaps even empowering, and in any case necessary response to the circumstances in which Sherpas find themselves today. Changes cannot be fully understood without reference to continuities, and continuity is often the complement - if not the key ingredient - to a positive experience of and strategy for change. It is this dialectical relationship between change and continuity, between transformation and consolidation, between structure and action which lies, I suggest, at the heart of change in the Khumbu today.

VON FURER-HAIMENDORF'S ACCOUNT OF CHANGE

Von Furer-Haimendorf accepts uncritically the view of early Sherpa history which holds that the Sherpas originally came from the province of Kham in Southeast Tibet some 400 years ago, crossed the high pass of Nangpa La that separates the Tibetan plateau from the mountains and middle hills of Nepal, and settled in the Khumbu region, moving down to

Pharak and Solu only in subsequent migrations (1984: 27). He also suggests that Sherpas themselves know (and care) little about their post-settlement history (1984:26), and refers to the introduction of the potato in the mid-19th century (1984:14), the introduction of monasticism early in the 20th century and the activities of particular religious figures (1984: 84-86) as being the most significant events in Sherpa history prior to 1950.

Among the various events affecting the Sherpas over the last 30 years or so have been the decrease in trade with Tibet as a result of the Chinese takeover; the subsequent influx of Tibetan refugees, the increasing influence of monasticism and need for alternative economic pursuits, the increasing influence of the central Nepalese government in Kathmandu (including the introduction of a panchayat system of local government); the introduction of Western medicine and education, and, perhaps most significant of all, the establishment of lucrative mountaineering and tourist industries. The opportunities in these industries became available at just that time when they were most required, i.e. when trade with Tibet had declined. Unlike the Thakalis and other high Himalayan groups dependent on trade for their survival, the Sherpas were able to stay in the Khumbu and even prosper (see Von Furer-Haimendorf, 1975).

The effects of such economic and political changes on Sherpa social organisation and culture however have been significant. Von Furer-Haimendorf draws particular attention to what he regards as a radical reordering of socioeconomic relations and statuses brought about by tourism and the sudden absence of young men from the Khumbu for extended periods. The result according to von Furer-Haimendorf has been radical changes in marriage patterns, family structures, labor patterns, settlement patterns, distribution of wealth, political structures and even fertility rates. Von Furer-Haimendorf also identifies a deterioration in traditional Sherpa culture and even morality (due in part to prolonged contact with Westerners and their values while on expeditions and treks).

The net result of such changes, according to von Furer-Haimendorf, is a "transformation" so profound that his earlier monograph on the Sherpas (*The Sherpas of Nepal*, 1964).

"must now be regarded as largely outdated and of only historical interest." (1984:x)

He acknowledges a

"feeling of disappointment and sadness to see this seemingly ideal society and life style transformed ...the Sherpas I knew in the 1950's were happier than they or their descendants are in the 1980's." (1984:xi)

CRITIQUE OF VON FURER-HAIMENDORF'S ACCOUNT

Now such a response is perhaps understandable, given von Furer-Haimendorf's unique personal experience of change in the Khumbu. In the early 1950's the Sherpas had only just come into contact with the Western

world. Von Furer-Haimendorf was clearly impressed by their apparent compassion, generosity and cooperativeness. His book is, in part, a personal statement of respect for such values and a plea that they be maintained in the face of what are, without question, real and important changes. As such the book has undoubted value. Furthermore, his account of change in the Khumbu is the only one currently available. (Jim Fisher's provocative personal account is as yet unpublished). Certainly the work of Ortner (1970, 1975, 1978) and Paul (1970, 1977, 1982) does not demonstrate any greater awareness of or sensitivity to the question of change.

But is von Furer-Haimendorf's account of transformation really accurate? And perhaps just as importantly, is it helpful? I would question both the "seemingly ideal" picture that von Furer-Haimendorf's functionalism gives us of Sherpas in the 1950's, and the linear, imposed and essentially negative picture he has given us of changes since then. Change is a far more ambiguous and complex force than von Furer-Haimendorf allows, and I wish to demonstrate this both substantively--in a review of some of the ethnographic material he presents--and more formally in a critique of the theoretical framework of change in which the ethnographic material is presented.

a) Review of the ethnographic material

There is a good deal of evidence for the view that large-scale settlement of the Khumbu may have followed settlement in Solu rather than preceded it as von Furer-Haimendorf and other ethnographers (e.g. Oppitz 1968) suggest. The Khumbu was a *beyul* (sacred hidden valley) for the Tibetans, and a pilgrimage place for the Rais. Sherpa legends tell how the goddess Chomolongma sent the first settlers down to Solu to make their seeds (clans?) strong there first. Many of the "newer" Sherpa clans (see Oppitz, 1968) such as Shenggu are more predominant in the Khumbu than in Solu, and the increasing differentiation between the lama and the *lhawa* (roughly translatable as shaman) roles (encouraged by the expanding politico-religious influence in the 18th and 19th centuries of the relatively "orthodox" Gelugpa sect in central Tibet) is less pronounced in Solu than in Khumbu. Furthermore, there is evidence that the early Khumbu settlers were marginal (socially, economically or both) to Solu Sherpa society, or perhaps motivated by the entrepreneurial opportunities that lay implicit in the interstitial position of Khumbu on the trade route between Tibet and Solu. Why else would people choose to settle in such a harsh environment? The history of the relatively recent settlement of Manidingma in upper Solu, and of the Rolwaling Valley by Sherpas marginal to Thame society provides further support for this theory of settlement. Finally, census figures suggest that the massive increase in population in the Khumbu relative to Solu since the mid 19th century cannot be explained by high fertility rates alone. A more active, socioeconomically motivated history is implied by this evidence. Contrary to von Furer-Haimendorf's assertions, Khumbu Sherpas do possess a number of written genealogies and documents concerning their history, some of which were shown to me in Thame. These suggest that the Khumbu may well have been primarily a pilgrimage place in the past, with only 2 or 3 small communities linked to *gondas* (religious centres) until six or so generations ago.

Von Furer-Haimendorf's portrayal of a static, "seemingly ideal" and more "happy" past is highly problematic. Evidence of serious intrafamilial, intravillage and regional conflicts and intrigues appear frequently in oral histories, and many of the conflicts still smouldering today pre-date contact with the Western world in the 1950s.² Von Furer-Haimendorf talks of the "basic homogeneity of Sherpa society ... all Sherpas are considered of equal status" (1984:26). Status differences however (and the fundamental significance of status in ordering socioeconomic and cultural interactions), gender inequalities, the division of the universe into "high" and "low", rules of commensality, individualism and the emphasis on the nuclear family, greed, jealousy and so on are all long-established facts of life in Sherpa society.³

Von Furer-Haimendorf's suggestion that

"the sudden affluence of successful porters brought to the fore men of a class which used to live in the shadow of the rich families of inherited wealth" (1984:65)

is based on the assumption that it was the landless who benefitted most from the infusion of wealth offered by tourism, since it was they who were most able to leave the village for extended periods on expeditions and treks. It is important to remember however that the wealthy--who, as traders, were used to lengthy absences from home--are in no way denied the opportunities available in tourism. In fact the majority of Sherpa-controlled tourist companies are today owned and managed by Sherpas from traditionally wealthy families. Wealth is perhaps more important to the achievement of status than it was in the past, but it is still not a sufficient condition, and in any case wealth is still measured in terms of traditional gifts/commodities--gold, livestock, and religious objects--as much as by cash or down jackets. The value of the latter of course is more susceptible to inflation. Fisher (1986) reports that the price of potatoes in the Khumbu increased 1150% between 1964 and 1985, while porters' wages rose by only 400% in the same period.⁴

Von Furer-Haimendorf writes that.

"the old values of a society virtually free of competition and rivalry no longer fit an economic system which encourages individuals to consider acquisition of money their first priority." (1984:112)

Much of the trade with Tibet might be, for present purposes, labelled "subsistence" trade. von Furer-Haimendorf himself acknowledges that "the whole structure of Sherpa economics favored the entrepreneur" (1984:65). Certainly my proposed reworking of the history of Sherpa settlement in the Khumbu suggests important entrepreneurial motivations. The traditional economy is best represented, I suggest, not as a static, harmonious gift exchange economy, but as comprised of a balance -- unequal, capricious,

and changing--but a balance nevertheless between a gift exchange economy at the center and a more entrepreneurial one at the periphery. Such entrepreneurship was facilitated in part by the fact that it did not appear to significantly exploit or depend upon fellow Sherpas.⁵ To the extent that entrepreneurship was always possible, the opportunity for active manipulation of the balance between gift exchange and commodity exchange has always been present and is not wholly a product of tourism.

Nevertheless it is important to point out that although Sherpas have a long history of entrepreneurial activity they are perhaps less entrepreneurial today than opportunities might suggest (and which the neo-classical economic approach would predict).⁶ Sherpas themselves do not claim to be good entrepreneurs. An important reason for this is the apparent lack of interest in entrepreneurial cooperation with each other--not because Sherpas don't trust each other, but rather because the threats to such trust inherent in entrepreneurial activity are simply not considered worth it. The maintenance of relations remains fundamentally important. Sherpas continue to behave "economically" in certain contexts and at certain times, but this in no way exhausts their behavior. The formalist notion of the "economic man" is not applicable to the Sherpa, either in the past or the present.

Von Furer-Haimendorf is particularly concerned at the number of young men leaving the Khumbu to seek their fortune in Kathmandu and in trekking, at the expense of their families and traditional socioeconomic and cultural activity (1984:64,68). Many of the young people I have talked with however--far from rejecting traditional Sherpa social and cultural values--are keen to reinforce them.⁷ The economic vulnerability inherent in a dependence on tourism and mountaineering for income is being recognized.⁸ (These include the increasing number of fatalities on expeditions, fluctuations in the number of tourists, dependence on unpredictable environmental and external political factors, the increasing use by tourists of non-Sherpa guides and porters, the increasing pressure on natural resources and so on). There is increasing support for the view that socioeconomic reform and prosperity does not need to proceed at the expense of traditional culture and identity. Many young people (including those whose families had long ago migrated to Darjeeling) are now returning to the Khumbu, marrying and building houses there.

In a survey I conducted of over 50 randomly selected Sherpas currently living and working in Kathmandu (90% of whom were under 40 years of age) 84% had returned to Khumbu at least twice over the last five years and nearly half returned every year. The main reasons given for these visits were visiting family and friends, participating in religious and cultural festivals, and pursuing their responsibilities as participants in a complex and demanding gift exchange network. Only 9% of my sample said they did not intend to live in Solukhumbu permanently in the future. There is in fact considerable evidence for the view that seasonal migration may serve to maintain the traditional sociocultural order rather than "transform" it (a view now emerging from migration studies elsewhere in the Third World).

The onerous but all-important reciprocal obligations inherent in the system of cooperative work groups (e.g. *lamin*) are taken very seriously. (A close friend's family participated in over 20 such groups over a 12 month period.⁹ Similarly, responsibilities as participants in the gift exchange networks (e.g. *larke*) are taken very seriously (A close friend's mother was unable to return to the Khumbu from Kathmandu by plane because of heavy snows and thus a helicopter was chartered--at exorbitant cost--so that she could fulfil the household's *larke* responsibilities at the appropriate time.¹⁰ Rotated village-wide hospitality responsibilities (e.g. *lava*)¹¹ and leadership responsibilities (e.g. *nawa*) are also taken very seriously. Recent village meetings in Thame reestablished the authority of traditional controllers of land and grazing.

Von Furer-Haimendorf asserts that traditional community management systems for the protection of forests (implemented by *shingnaua*) were highly effective, and he implies that the establishment of the National Park, by abolishing these systems, was responsible for the current deforestation crisis (1984:6). In fact the Park, with the support of the Sherpas, is currently actively promoting the reintroduction of the *shingnaua* system.¹² The Sherpas themselves are well aware of the significance of the threats to their environment, from local Sherpas as well as from tourists and "development" projects. The disastrous Austrian-sponsored hydroelectricity project, for example, which was built without permission from the National Park, and without consultation with the local community, effectively destroyed hectares of forest before being washed away in a flood without ever providing electricity.¹³ In fact many Sherpas have commented to me that the longterm environmental impacts of development and tourism may prove to be more serious than the sociocultural impacts.

Religion continues to enjoy considerable support in the Khumbu. Community-wide festivals such as *Bum Tso*, *Dumji*, and *Mani Rimdu*--are attended in large numbers (with nearly a third of the local population attending the 1986 *bum tso* at Tangboche.¹⁴ Donations to the *gondas* (monasteries) for their upkeep, for the performance of festivals, and for the support of individual monks are considerable. Nearly Rs. 200,000 (Aust. \$ 13,000) was collected, for example, to hold the *bum tso* at Tangboche in 1987. In Thame, household expenditure patterns show that nearly 20% of income will be devoted towards monastery-related activities, with a further 18% on domestic religious activities.¹⁵ Many new *thang* (private chapels) are being built¹⁶ and new *mani* stones and *kani* (entrances to *gondas*) are being constructed. The demand for the services of monks to perform domestic rituals is such that monks complain they have no time to attend to their own religious pursuits.

In addition to a resurgence of interest in "orthodox" Buddhism however, and the (more Gelugpa-influenced) monastic establishment (which von Furer-Haimendorf does acknowledge)¹⁷ there is an important corresponding rise in interest in and use of the more pragmatic "shamanic" components of Sherpa religion (which von Furer-Haimendorf virtually ignores, and which Ortner (1970, 1978) and Paul (1970, 1976, 1977) even deny). Sherpas still

consider themselves loyal followers of the Nyingmapa sect even though many elements of the Gelugpa sect can today be found in monastic rituals and ideas. Of course the division between "orthodox" and "shamanic" traditions of Sherpa religion (reflecting such well-worn theoretical anthropological dichotomies as the Great Tradition/Little Tradition) is itself a heuristic device only and one not known to the Sherpas themselves. The actual day to day practise of religion is far more complex than this division allows. A more accurate, useful--and indigenous--approach is to regard the various beliefs, practitioners and practises as representing strands of a single braid, utilized for different purposes on different occasions. The historical relationship of interdependence between monks, married village-based lamas, (banzin), *lhawa* (shamans), *minung* (diviners) and other religious functionaries persists, albeit in a modified form.¹⁸

While "orthodox" Buddhist deities are accorded a higher existential status (by "orthodox" Buddhism!) than the local *yul lha* (local gods), *lu* (serpent deities), *shrendi* (spirits) of various types, and *dui* (demons), they are no more "real". In fact it is the local gods and spirits who--because of their closer proximity to humanity--are considered to have most interest in and influence on day to day life. The high gods may be less capricious but they are also less interested and thus less manipulable. Even young educated Sherpas who claim to be less affected by the local spirits (because their relations with them are more tenuous as result of Western education and ritual neglect) nevertheless sometimes complain that they are unable to control them and use them when required.

The tantric Nyingma sect followed by the Sherpas stresses the complementarity and, ultimately, the unity of the transcendental/other worldly and pragmatic/this worldly aspects of religion. This interdependence and interpenetration still characterises the actual practise of Sherpa religion.¹⁹ It is therefore misleading, I suggest, to neglect the active pragmatic aspect, to see it as either incidental to or in conflict with a distinct dominant "orthodox" tradition.

Von Furer-Haimendorf (and Ortner 1978:32 and Paul 1970:583, 1976:141)²⁰ has suggested that the number of traditional healers has declined in recent years. However, in 92% of the 400 or so episodes of illness that I collected data on in the Thame valley, at least 1 traditional Sherpa healer was utilised; and in 53% of cases between 2-4 such healers were consulted.²¹ Furthermore, it is important to remember that, according to the Sherpas, the number of healers is determined no so much by demand as by whether individuals are "called" by the gods to the vocation. Such callings are regarded as involuntary and cannot be ignored. Fluctuations in the number of healers do not necessarily correlate therefore with changes in attitudes towards traditional culture. Such fluctuations appear to have occurred throughout Sherpa history.

Von Furer-Haimendorf is correct in identifying the significant and pervasive influence of relations in ordering social and cultural life. According to the Sherpas all things in the world--people, gods, events, even inanimate objects and emotions--are inexorably interconnected within a framework of complex, and powerful relations. The establishment and maintenance of these relations is the prime motivation and standard of

behaviour; the lowest common denominator to order and meaning; the *sina qua non* of existence. But just as existence is problematic and changing, so too are relations.²² In ignoring this fact von Furer-Haimendorf has confused interconnectedness with harmony, and change with exploitation.

In fact it is possible to argue that the emphasis on generosity and hospitality in Sherpa society (and in Mahayana Buddhist communities in general) stems directly from the society-wide recognition of the pervasiveness of jealousy and other forms of negativity in human nature, and the potential for disorder that this implies. Giving need not be altruistic, concerned as it often is with the accumulation of *sonam* (individual merit). Indeed, it is often the wealthy, and those with high social and religious status who benefit from acts of giving rather than the poor.

Hospitality is essential to the maintenance of relations--both between people and with the gods--but it is also highly problematic. Hospitality is all about manipulation and is an important source of *tuk* (poisoning), *pem* (projections of negativity) and so on. Even slight breaches of etiquette by either donor or receiver can cause "bad" relations.

The Buddhist ideal of compassion (*nyingje*) is very important to the Sherpas, but it often comes into play only within the context of the framework of relations on which social existence is dependent. There are many stories of individuals and families suffering because compassion was not shown them, because of their social insensitivities and misdemeanors.²³ In sum, although relations are fundamentally important, they are never static, never given, and they in no way guarantee equality or harmony. Life is not wholly determined by relations; Sherpas are actively engaged in reconstructing and manipulating the complex webs of significance that give life both its meaning and its unpredictability.

There are a number of other difficulties with von Furer-Haimendorf's book. Firstly, he makes little use of the vast amount of other research available on the Sherpas²⁴ (although he refers to the work of other ethnographers in other communities in Nepal).²⁵ This is a serious weakness, I think, for the quality of some of this research is very high and provides an important and necessary complement to von Furer-Haimendorf's own material. Ortner (1978) for example, reacting against von Furer-Haimendorf's (1964), Durkheimian portrayal of harmony, egalitarianism, and communality, has focused attention instead on the individualism, hierarchy and conflict in Sherpa society and religion. However, the point is, I suggest, that Sherpas are both communal (due at least in part to the significance of relations in a harsh natural environment and, perhaps, the importance of agriculture) and individualistic (because of the problematic nature of these relations in a limited social environment. Remember also that the Sherpas are also pastoralists, an activity often coinciding with individualism and social and political atomism). To deny one or the other, or to assert a linear development from one to the other, is to ignore the important dialectic that links communality and individualism, and structure and action more generally.

Secondly, von Furer-Haimendorf is at times unclear about what village or area of Solukhumbu he is referring to. Differences between villages in Khumbu and their individual responses to change are both considerable and important, especially between villages more and less affected by tourism. For example Fisher (1986) says that in 1978, 85% of households in Kunde had at least one member employed in tourism versus only 47% in the village of Phortse. Earnings from tourism amounted to Rs 895,000 for the village of Namche that year versus Rs 185,000 for the village of Phortse. In Thame Valley, on the other hand, while nearly 70% of households were involved in tourism, only 26% of household heads gave tourism as their principal occupation.²⁶ The people of Thame constantly remind me of the sociocultural differences between Thame and other villages in the Khumbu. Differences between Khumbu and Solu are even more pronounced.

Thirdly, while it would have been beyond the means and objectives of von Furer-Haimendorf's book to look at all the factors influencing change, some important ones have been ignored. I was somewhat surprised at the paucity of discussion of individual Sherpas and their role in change (e.g. the influence of individual monks, wealthy traders, employees of Hillary's Himalayan Trust etc.). Little mention was made of the impact of the national and international political economy on the Khumbu, the impact of internationally-sponsored "development" (such as the Austrian's hydro project or Hillary's Hospital and schools), or even of the impact of researchers (and particularly the apparently continuous troupe of anthropologists!).²⁷ Remarkably little attention was given to the role of women (e.g. their increasing role in production and distribution in the absence of men). Similarly, of course, little attention was given to the impact of changes on women, or to women's perceptions of change.

Another criticism which Sherpas themselves raise about von Furer-Haimendorf's book is his use of Sherpas' personal names, particularly when citing potentially embarrassing cases to demonstrate his assertions of change. This practice is surely neither helpful nor necessary.

Von Furer-Haimendorf's treatment of Sherpas resident in Kathmandu requires follow-up. He repeats the oft-cited assertion that the "Sherpas do not have the skill to compete successfully with the Marwaris, Thakalis and Tibetans" (1984:71) and that "the lack of educational qualifications has prevented the Sherpas from attaining influential positions in government service" (1984:72). Sherpa business interests in Kathmandu are today both extensive and successful, and it is perhaps these interests, combined with political factors (rather than the lack of skill or education) that has resulted in the under-representation of Sherpas in government service.

While on this subject, it is important to point out that the influence of Nepalese language, culture and politics in Kathmandu is at least as important as the impact of tourists' culture. This is hardly surprising given the degree of contact with Kathmandu, and the large number (more than 300) of Nepalese army, police, bank and national park personnel stationed in the Khumbu. The experience of government from the center, however, has perhaps helped to forge a stronger sense of Sherpa ethnic solidarity in a national political context.²⁸ The Sherpas have long

recognized that whatever assistance they will receive for the building of a better community, it is not likely to come from the government. Rather it will come from tourists and private aid organizations.

In fact it has been suggested to me that the consolidation of traditional Sherpa culture in the Khumbu is due, in large part, to tourists, offering both moral and material support for the preservation and exhibition of those aspects of traditional Sherpa culture which they find entertaining.²⁹ (Solu on the other hand, with relatively less tourist influence and more government influence, is experiencing rapid social and cultural changes). Conversely, other Sherpas have suggested to me that the very fact that tourism is so socially disruptive means that extra effort is expended to maintain traditions and avoid total sociocultural disintegration. Whatever the case, the impact of tourism is clearly more complex than von Furer-Haimendorf portrays.

A number of other of von Furer-Haimendorf's assertions require clarification. Von Furer-Haimendorf's last visit was in the spring of 1983, at the height of the tourist season, and his tourism-dominated assessment of Sherpa sociocultural life reflects this. At other times however life in the Khumbu changes dramatically (e.g. the well-supported community festivals, of *dumji* and *phangi* in monsoon) and such changes are of great importance to an understanding of Sherpa sociocultural and economic activity as a whole.

One of von Furer-Haimendorf's more disturbing arguments is that traditional marriage patterns and family organization have broken down as a result of the long absences of males in trekking activities. He writes that "the pattern of family life has greatly changed" (1984:35) and "engagements have become even more unstable" (1984:37). There has been a "reduction in the number of polyandrous marriages" (1984:44) but "polygyny on the other hand has become more common" (1984:44).

Firstly, it is important to remember that husbands were separated from wives long before the advent of tourism. Trading expeditions often lasted longer than today's mountaineering expeditions and were certainly further afield. Secondly, the Sherpas themselves—at least in the Thame Valley—do not see marriage patterns as having changed significantly, and I found little evidence for a rise in polygyny.³⁰

Von Furer-Haimendorf cites demographic data collected by Lang (1971) and Pawson et.al. (1984) to assert that fertility, and thus the population of Khumbu, (particularly of those villages not on the main tourist trails) is undergoing considerable change, and declining as a result of the absence of males (1984:83).³¹ My census in the Thame Valley (not a major tourist destination) conflicts with the idea of a declining population. Fertility rates appear to be relatively high for a Himalayan community and infant mortality is on the decline.³²

Von Furer-Haimendorf writes with reference to land that in the past "land disputes were extremely rare" (1984:112); that "there is at present no market for houses in *gunsa* settlements" (1984:12); that "houses and

land are as expensive in Khumbu as they are in Kathmandu (1984:12), and that "there have been no major shifts in the holdings owned by individual Sherpa families" (1984:24). The many sales (and disputes over sales) of land that I recorded in the Thame valley however challenges these assertions. Von Furer-Haimendorf writes that cattlebreeding "plays no longer a central role in the economy of Khumbu" (1984:21). My observations in the Thame valley however and those of Cox (1985) in the Imja Khola Valley suggest a recent rise in the economic significance of cattle and pastures, and point to their continued sociocultural significance. Von Furer-Haimendorf mentions that trade with Tibet has increased slightly since the thaw in Nepalese-Chinese relations. In fact, this trade is now of considerable importance (although the emphasis is on Tibetans coming to Khumbu as much as vice versa). Finally, von Furer-Haimendorf comments that with the introduction of Western commodities "the Sherpa's diet has improved" (1984:80). The emerging problems of dental caries, ulcers, alcoholism, diabetes, cancer and even malnutrition however suggest otherwise.

In sum, much of the evidence von Furer-Haimendorf cites in support of his theme of "transformation" must be regarded as somewhat problematic, even were his theoretical framework useful. We shall now go on to explore this framework.

b) Review of the theoretical framework

Von Furer-Haimendorf's theme of "transformation" relies, of course, on a solidly structural functionalist theoretical framework for describing and analyzing change. What exactly then does von Furer-Haimendorf mean by "transformation"? Clearly he is not referring to Levi-Strauss' (1977) notion of the translatability of a system of signs into the language of other systems with the aid of certain substitutions, nor to Turner's (1968) notion based on the bipolarity and multivocality of symbols, nor Polanyi's (1944) approach to economic change, nor Foucault's (1975) concern with continuities within discontinuities. Given its many and divergent usages his use of the term "transformation" requires at least clarification if not development. Nowhere does he do this however and we are left wondering just what he really means.

What is clear is that he remains preoccupied with how changes in and to the socioeconomic system affect individuals, rather than vice versa; with transformed structures rather than processes and agency. The result is more akin to what Firth (1959) and Barth (1967) described as a "dual synchronic" study rather than a truly diachronic one. That is, it is an attempt to make a synchronic analysis diachronic by performing a second synchronic analysis and extrapolating. In the extrapolation however some important errors and omissions are made. In particular, power--its source, nature, legitimation and means of reproduction--is virtually ignored. The Sherpas appear as passive victims of a sudden externally-imposed catastrophe rather than active participants in an ongoing historical process. In under-

emphasizing power, action, and the role of the individual, von Furer-Haimendorf fails to illuminate the all-important articulation between structure and agency, between culture and society, and therefore how the Sherpa sociocultural formation as a whole reproduces itself over time. Production and consumption are artificially polarised and the nature and impact of ongoing mechanisms of distribution and exchange are ignored. His original emphasis on communality and egalitarianism, founded on "moral" values rather than socioeconomic relations, leaves him unprepared for the individualism which he "discovers" in later years, and how the two might co-exist. The result is a rather simplistic and not particularly helpful equation between external events, individualism, transformation, and lack of "happiness."

TOWARDS A POWER-CENTRED APPROACH TO CHANGE IN THE KHUMBU

Concern with the effects of change and even commitment to strategies of action requires first an adequate theoretical framework for understanding change. In this final section of the paper, I want to review some rather obvious--but nevertheless important--issues concerning the study of change in anthropology, and to offer an alternative approach based on the notion of power as constitutive of and constituted by a dialectical relation between structure and action.

Firstly, change is not necessarily to be deplored. The fact that a community adheres to a particular form of Mahayana Buddhism currently popular (and, I suggest, largely misunderstood) in the West does not, of itself, mean that life in that community has always been ideal. In fact many changes (e.g. the redistribution of wealth, the loosening of the control exercised by the monastic establishment in matters of legal judgement, and the provision of Western medical facilities as a further source of healing) might well be seen to be in the best interests of the majority of Sherpas. Certainly the Sherpa experience of change has been less disruptive than that of other Mahayana Buddhist communities in the Nepal Himalaya.³²

Secondly, change is not new to the Sherpas. Change is what led the Sherpas to the Khumbu in the first place, and a sensitivity to change is what enabled them to survive there and prosper. As traders the Sherpas have long been successful exponents of "impression management", accustomed to dealing with people from other cultures, and adopting those aspects of different lifestyles which they saw as being advantageous to themselves.

Thirdly, change has many forms and dimensions and these must be clearly distinguished. Change is not necessarily linear, or evolutionary, or even irreversible. And as Durkheim himself recognised change is complementary to--perhaps even essential to--continuity (and vice versa).³⁴ What is really remarkable in the Sherpa case is not so much change per se, as the nature and degree of continuity accompanying

it; the degree to which changes have taken place without any fundamental transformation in traditional discourses and relations of power; the degree to which change has signalled an efflorescence of the traditional gift exchange system, the traditional healing system, and so on.

Finally, it is important to distinguish clearly between change that occurs as result of the exercise of power within a community and that exercised outside it, for an understanding of the relationship between these two sources of power is fundamental to an understanding of change in its wider context. By overemphasising external factors, von Furer-Haimendorf is unable to illuminate the internal forces for change. And by ignoring the power dimension, the wider context of these factors and forces--how they themselves have changed over time and why--is ignored.

The model which I wish to propose then is based on the notion of power as constituting a dialectical relation between structural determination (and hegemonic control) on the one hand, and the opportunity for agency (and individual autonomy) on the other. In no situation, I suggest, can the one be found -- at least in its extreme form--without the other. Following on from Foucault (1975), Lukes (1974) and Bourdieu (1977), power is most usefully understood not as a property, something overtly exercised by someone over someone else through the use of force or coercion, but rather as a relation which, although not directly observable, nevertheless serves to achieve social order. The transformation of structures through agency is always "balanced" by an active consolidation of structures, and a community is thus always at least partially the architect of its own destiny. What is important however is that this balance is dynamic, unequal, and capricious. It must be so because it is legitimated and reproduced by relations of power. The challenge then is to explore how and why the balance is reproduced and changes over time.

The concern with the relationship between structure and agency is of course hardly new in anthropology. The demise in the 1950's of the more rigid, homogenising and deterministic formulations of structure (e.g. that of Radcliffe-Brown) led to important -- and diverse--theoretical contributions to the study of agency such as Firth's "principles of social organisation" (1955) and, more recently, Giddens' treatise on "structuration" (1979), Bourdieu's notion of "habitus" (1977), and Foucault's archaeology of the production of discourse. Such contributions are tempered however--some more than others--by the fear that a focus on the possibilities for individual "choice" will suddenly metamorphose into a description of unfettered voluntarism, a formalist decisionism, an apologia for a liberal history of freedom and rationality. They therefore focus firmly on the relationship between structure and agency as the expression of power rather than the use of force.

In Sherpa society the overt exercise of force by individuals is carefully controlled. Nevertheless, the exercise of power is as important to continuity and change as it is anywhere else. It is power which

provides the catalysing spark to the structure of relations on which existence is dependent. To the extent that the structure of relations is (and always has been) a significant and pervasive constraining influence in Sherpa culture and society, certain structures and processes which reflect and reinforce these relations are reproduced (e.g. an internal emphasis on gift exchange, a lack of centralized formal political organization, communality, transcendental approaches to religion, determinate notions of causality, non-medicalized approaches to healing and so on). To the extent however that relations are also problematic and flexible, there is considerable opportunity for individual action, and other complementary structures and processes can be identified (e.g. the possibilities of entrepreneurial activity and commodity exchange, the concentration of power in certain individuals and roles, individualism, pragmatic orientations to religion, less determinate notions of causality, relatively medicalized approaches to healing, and so on.³⁵ The Sherpa sociocultural formation is characterised not by one or the other sets of structures and processes but by both, and what is important is how and why the balance between them is reproduced and changes over time. To sum up, insofar as the potential for agency is constrained by structures; and structures exist only insofar as they are animated by individuals and the changing relations between them, a view based on the recognition of power is fundamental to an understanding of change.

Let me illustrate this by summarising again the changes that have taken place in the Sherpa economy. As far as we know, the Sherpas have always been traders, and commodity exchange at the periphery (where it presented little threat to fellow Sherpas) is a long-established fact of life. At the same time however generosity, hospitality and gift (and labour) exchange lies at the very heart of Sherpa economic, cultural and social organisation. Although the relationship between gifts and commodities is in no sense equal, or equalising, the fact of a balance of some sort remains. Were commodity exchange to be seriously threatened (as with the cessation of trade) the entire fabric of social life would be threatened (as occurred elsewhere in the Nepal Himalaya). Yet the introduction into the Khumbu of wage-labour, markets, and a greater range of commodities--though effecting a change in the balance in favour of entrepreneurship and commoditization--has nevertheless simultaneously signalled an efflorescence of gift exchange at the centre. A commodity continues to serve as a gift (and vice versa) according to the particular social context of exchange, and the greater range and accessibility of commodities has simply widened the scope for gift exchange. Cash and down jackets are as highly valued as more traditional gifts of woven yak wool blankets or salt, and certainly satisfy reciprocal obligations. The notion then that the traditional Sherpa economy was a classic, functional (and harmonious) gift exchange economy with a large pool of surplus labour, and that the penetration of capitalist market forces resulted--in a linear, predictable, step-like fashion--in the transformation of that gift exchange economy into a "modern" economy producing goods for cash, is clearly problematic.

A similar analysis can be developed for changes in Sherpa religion. The institution of monasticism has always been known to the Sherpas, despite the dominance until recently of *banzin* (married, village-based lamas). The introduction of celibate monasticism early this century was due to important external political and economic factors as much as internal social and cultural ones. (Of particular importance here is the expanding political influence of the monastic Gelugpa sect in Tibet, and the sudden concentration of wealth in a few Solu Sherpa families -- as result of political patronage by the Rana regime in Kathmandu--which was devoted to the building of monasteries as a way of acquiring status). At first, monasticism appeared to signal a decline in the relative status of *banzin* lamas. As support for the monastic establishments decreased in the 1950's and 1960's, so did the support for the *banzin*. Now, in the 1970's and 1980's there is renewed support for both, and the temporary separation of religion from politics (see Paul, 1977: 182³⁵ is now less rigidly applied. While significant changes have occurred in the nature of the balance between monasticism and *banzin* lamas, the fact of the balance remains. It would be clearly misleading to talk of an eclipse of a pragmatic "folk" tradition by a new transcendently-oriented "orthodox" monastic tradition, as ethnographers have tended to do.

A third illustration of the utility of this approach to change is that of the traditional Sherpa healing system.³⁶ The introduction of allopathic medicine into the Khumbu some 20 years ago, and the rising influence of Tibetan medicine (both due to complex external political factors) gave Sherpas access to new and relatively medicalised healing strategies, concentrating power in the hands of a few individual male healers in particular, and encouraging an objectifying, individualising, depoliticising and primarily symptom-oriented approach to healing. Nevertheless these changes have not--contrary to the claims of ethnographers--signalled any long-term decline in the role or use of shamans and diviners (many of whom are women). "Scientific" theories of causation have been successfully integrated into traditional concepts of causation, and multiple-healer consultation, traditional approaches to the management of therapy and care of the patient, socio-spiritual determinants of efficacy and so on remain. In fact these appear to be increasingly invoked as a means of providing the sense of meaning, order and identity sought in the face of a rapidly changing world. A dynamic balance continues between the forces enabling medicalisation and individual choice on the one hand and the traditional concern with causes and relational order on the other.

It is in this sense then that I offer "consolidation" not as a replacement for von Furer-Haimendorf's theme of transformation, but rather as a complement to it, and perhaps even a stimulus for it. Clearly significant changes have occurred, but what is perhaps most remarkable--and theoretically challenging--is why things haven't changed more than they have (and as they did elsewhere in the Nepal Himalaya). Per-

Haps there is more than just a sentimental truth to the idea that things standing shall fall but the moving ever shall stay."

CONCLUSION

Von Furer-Haimendorf does not claim to present a wholly objective account of change and I am not suggesting that "objectivity" is either to be valued for its own sake, or even possible. Maintaining an objective response to changes in communities where one has lived and worked (and hopefully grown) must surely be one of the most difficult and elusive tasks facing the anthropologist. This must be particularly so when one's involvement with the community spans more than 30 years, beginning in the early stages of its contact with the Western world. I certainly do not want to suggest that there is anything intrinsically wrong with re-studies which acknowledge a sentimental attachment to the people from whom one has learnt, or which is motivated by the concern for those people's well-being.

But as Read (1986) says in his re-study of the Gahuku-Gama of Highlands PNG:

"It is possible to see continuities beneath even the most seemingly disparate [events] and it is in this sense that the anthropologist returning to the field after more than half a lifetime possesses an inestimable advantage over those entering an entirely unfamiliar situation." (1986:xi)

In overemphasizing transformation and thereby neglecting consolidation, continuity and agency, von Furer-Haimendorf has I suggest insufficiently capitalized on this advantage. Furthermore, Read writes that:

"My regard for the Gahuku-Gama does not include a total acceptance of every aspect of the life I observed in that now-frozen segment of time, and I am reassured that most of those whose lives were not arrested in that period do not look back on it as a golden age." (1986:x)

The Gahuku-Gama are not the Sherpas, but the point is the same. There is no point in casting wistful eyes on some happier past. There is no way of going back, and nothing positive will be achieved by trying. Yet to acknowledge the imperfections of the past, and to be optimistic about the potential benefits of change for the future, does not in my opinion detract from the essential beauty of Sherpa culture and society. There is both room for and benefit in optimism. The Sherpas continue to construct and reconstruct their own cultural, social, economic and political reality, and to interact with the world outside on terms that they can at least influence, if not control. Their underlying pride, and confidence in their culture and identity, will serve them well as they face the problems of the future.

NOTES

1. Fieldwork was carried out between January 1986 and March 1987 with the assistance of a C.P.R.A. award and a grant from the Carlyle Greenwell Bequest. I would like to thank Michael Allen, John Gray and Geoffrey Samuel for their helpful comments on an earlier draft of this paper.
2. Von Furer-Haimendorf has not provided details of such conflicts anywhere in his many publications on the Sherpas.
3. See also Ortner's account of Solu Sherpas in Sherpas through their rituals (1978).
4. Many Sherpas deny that they have managed to save or invest earnings derived from tourism.
5. Fisher (1986) however, reports that by 1978 the majority of households in the village of Kunde employed a servant to maintain their fields, leaving household members free to participate in more lucrative tourism-related activities.
6. For a more detailed discussion of this view of entrepreneurship see my forthcoming article with Laurie Zivetz "From Trade to Tourism and Beyond: A study of entrepreneurship among the Sherpas of Nepal."
7. Sherpas resident in Kathmandu are less optimistic about the future of Sherpa culture than are Khumbu Sherpas. Such views of course may reflect (or serve to justify) longterm absences from home.
8. Sherpas often complain about the association between the term "Sherpa" as an ethnic label and the use of the term to denote the role of porter and servant to wealthy tourists.
9. There is no evidence--at least in Thame--for von Furer-Haimendorf's assertion that the important social and entertainment function of such groups is gone (1984:18).
10. For most Sherpa households, the "social budget" today exceeds the "domestic" budget.
11. A close friend recently spent over Rs. 10,000 (Australian \$750) as a *lawa* for the Dumji festival.
12. In May, 1986 the senior warden of the National Park, Lhakpa Norbu Sherpa, organized a community-wide seminar to discuss problems arising from deforestation and strategies for overcoming some of these problems (involving the community as well as the Park staff).

13. The project nevertheless is being pursued again by the Austrians in the same superior, insensitive manner. Efforts I made to get Austrian project staff to consult more with the local community were ignored completely.
14. In 1987 donations enabled a high reincarnate lama from Kathmandu to be flown in by helicopter for the occasion and nearly 1500 people came to receive his blessing.
15. Expenditure on religion in Khumbu is also significant among Sherpas resident in Kathmandu. In 1981 the Rimpoche of Tengboche raised nearly A\$25,000 in two days for the construction of a for Sherpas resident in Kathmandu.
16. A friend, flushed with wealth from a successful ascent of Everest, has recently built himself a *Thang* (private chapel) and bought the whole 65 volumes of one of the religious texts. At least three other chapels were built during the period of my field work.
17. Compare however Pawson et.al.'s evidence (1984) of a 50% reduction in involvement by Sherpas in religious occupations. This evidence must be viewed problematically at best.
18. See my M.A. Thesis (1985) "Transcendence and Pragmatism: A Study of Sherpa Religion", A.N.U. and forthcoming article "Lama Knows: religion and power in Sherpa society." Samuel (1978) has adopted a similar--though not identical--position on the basis of approaches influenced by structuralism.
19. Note how this contrasts with Paul's assertion that "with the original idea of the *sang ngak* practitioner forgotten, the idea that a man can pursue both worldly interests and his own salvation has lost meaning for the Sherpas." (1970:583) There is certainly no evidence for this assertion in Thame today.
20. Ortner writes "with the recent invigoration of Sherpa Buddhism and the Sherpas' first glimpses of Western medicine [shamanism] seems to have gone into a rather serious decline and may finally be on its way out." (1978:32) Similarly, Paul writes "Given a choice, Sherpa preference is definitely for textual ceremony rather than the shaman." (1976:147) I have no evidence for this in Thame. Where this is so may well reflect the lack of any real effective choice as much as anything substantial about the health seeking process. See my forthcoming paper "Power and Health Seeking Among the Sherpas of Nepal."
21. See my forthcoming PH.D. thesis: "Beyond medicine: the production of sickness and healing in Sherpa society."

22. To the extent that relations are important, and orthodox determinate notions of karma are dominant, Sherpas adhere to the fundamental tenets of Buddhism. To the extent however that relations are also problematic, and karma is indeterminate Sherpas maintain what was once described to me as a thumbprint approach to religion. That is, each individual's karmic load and thus practise of religion is as arbitrary and different as their thumbprints. There is an on-going tension in Sherpa society between a remote but powerful cognitive ideal emphasizing interconnectedness and a culturally disvalued but emotionally powerful and pragmatic interest in exercising individual autonomy.
23. A classic case of this is that of L.P., a 54 year old nun. Several years ago, before becoming a nun, L.P. had angered her affines by unilaterally disposing of her deceased husband's property to people outside of the family. This transgression had led to a total breakdown of relations with her husband's family, one of whom was a highly respected lama, and therefore with her neighbors. When she became ill, no help was forthcoming and no healer would treat her. She was left to her own devices and was later found dead--her death obviously speeded up by social isolation. Even compassion for a nun is subject to appropriate participation in the framework of social relations.
24. Of particular importance here is the work of Funke (1969), Oppitz (1968), Ortner (1970; 1975; 1978), Paul (1970; 1976; 1977; 1982), Samuel (1978). See my M.A. Thesis for a review of this literature. See also more recent research by Presern and Halligan (1984), Bjonnness, Brower and Stevens (unpublished). There is also a large number of reports on various environment and energy related issues available at the Park headquarters in Namche Bazaar.
25. For example, Levine's (1981) ethnography on the Nyinbas of Northwest Nepal. I personally found such references distracting due to the significant differences between Nyinba and Sherpa history, culture, society, environment and so on.
26. I am very aware of the subjective quality of my census data. More comprehensive and recent data is required to be able to accurately explore regional differences and longterm changes in occupation and income.
27. There is a strong case to be made for the role of the anthropologist in promoting and facilitating community management (and perhaps ownership) of development facilities and projects. Such involvement by the Sherpas themselves is essential to the sustainability of such projects. Moreover, the research and community mobilization enabling such involvement can and should be done by the many educated Sherpas themselves. Implicit here is a change in the role of the anthropologist from "expert" to "co-expert" and catalyst.

28. No Khumbu Sherpa has ever been elected to the national Rastriya Panchayat, despite the economic significance of the Khumbu to Nepal.

29. In a similar vein Fisher writes:

"Sherpa society, or the Western image of it, represents a dramatic realisation of what Westerners would like to be themselves, hence the frequently breathless enthusiasm of the former for the latter" (1986:47). (Or is this perhaps just the altitude?!) Fisher goes on

"Sherpas are so massively reinforced at every point for being Sherpa that there is every reason not only to 'stay' Sherpa, but even to flaunt one's Sherpahood" (1986:51). As a result, a process of 'Sherpatisation' is occurring among other Tibetan Buddhist groups in Nepal, according to Fisher.

30. Certainly some Sherpas were annoyed at von Furer-Haimendorf's numerous references to sexual liaisons between Sherpas and Westerners.

31. The limitations in collection methodology and comprehensiveness of Lang's and Pawson's data are well recognised by residents--Sherpa and Western--in the Khumbu.

32. This is due in particular to the activities of the Hospital. Fear of interference by shrendi (spirits) accompanying those assisting at birth mean that there are no traditional birth attendants in the Sherpa healing system, and birthing is still very much a private affair.

33. Taussig's (1980) approach to change in Southwest Columbia has much in common with the approach I would like to propose for the Sherpas. Taussing writes:

"Underlying the accretion of added elements and transformations, something essential in the pre-colonial structure of ideas continues, not as a mere survival or relic from the irretrievable past, but as an active force mediating history." (1980: 222 my emphasis)

34. Many of the apparent "contradictions" and "anomalies" identified by ethnographers can I suggest be explained by reference to this model of change (e.g. the fact that supernaturals exist but are not "real", the fact that hospitality is so highly valued yet is also a primary source of illness and misfortune, the law of cause and effect coexisting with the ritualized manipulation of karma, the significance of kinship on the one hand and non-kin bases of affiliation on the other, and so on). In particular the discrepancy noted earlier between von Furer-Haimendorf's portrayal of communality, egalitarianism and harmony, and Ortner's emphasis on individualism, hierarchy and conflict can be understood by reference to this

model. Both approaches are of course "correct", within the limits of their particular paradigmatic bias, objectives and focii, but neither approach on its own is capable of giving us the full--and moving--picture. The anthropological penchant for dichotomization is clearly problematic when viewed through the perspective offered by this approach to change.

35. Paul writes "[Sherpa leaders] insist on a separation of church and state and hurl at religion the charge that, while its' truths are really true, they only concern a world other than our own...by thus isolating the domain of religion they ally themselves with what they perceive to be the ascendent reality of power, the Nepalese state" (1977:182).
36. This is the subject of my forthcoming Ph.D. thesis: "Beyond medicine: The production of sickness and healing in Sherpa society."

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In Search of the Household: Some Observations from the Western Hills of Nepal

Janet Seeley

INTRODUCTION

Surveys are used by many disciplines to collect data on a wide range of topics. These data make up the basis for the majority of socioeconomic and agricultural reports produced in Nepal.¹ A perusal of these reports reveals that the 'household' is the important unit for data collection, analysis and planning. The reasons for the use of 'the household' for surveys can easily be explained: the 'list of households' is often the only list available as a sampling frame; the household is thought to be easily recognisable because the majority of people grew up and continue to reside on one; and the household is assumed to pool resources and act as a single decision-making unit. But what is a 'household'?

The purpose of this paper is to examine the variety of household groupings found in the comparatively small area of the Nepalese hills, 2000 square kilometres, covered by Lumle Agricultural Centre's Extension Command Area. The intention is to sound a cautionary note about taking the use of the 'household' as a unit of analysis for granted, not merely to add to the burgeoning literature seeking for a universal definition of the household. However, in order to set the discussion in context, it is to the question of definition that I turn briefly.

THE QUESTION OF DEFINITION

The term 'household' began to be used in a technical sense by anthropologists and historians in order to differentiate between family groups, based on kinship, and the actual groups of people residing together in ethnographic situations. 'Households' have been said to be 'fundamental social units', more widespread and cross-culturally comparable than many more frequently studied institutions (Netting *et al.*, 1986:xxvi). It is not surprising, therefore, that the use of the term 'household' can lead to the belief that comparable 'household units' can be found in any culture or society one cares to study. Indeed, there has been much discussion of, and many attempts to arrive at, 'a' definition of the household.² But the growing literature from this debate on the 'household' provides ample evidence that there is nothing simple about this domestic unit or its definition.

Despite the stress on definition in much of the academic literature, many technical surveys and reports make no attempt to define the household unit or, when they do, provide a broad definition such as: 'a social unit defined by the sharing of the same abode or hearth' (Ellis, 1988:13). Even when care is taken to define the unit according to the social situation under investigation, an apparently comprehensive definition can still mask a multitude of differences within and between seemingly similar social groups, as in the Nepalese hills.

Some surveys and reports not only fail to define the unit but also demonstrate a lack of rigour with which the word is used. A common practice is to use it interchangeably with 'family'. This may not always matter as, for example, in a general discussion of resource use (Bell and Delobel, 1987, for example). But, ideally a distinction must be made because as Netting (1986:xx) points out, nonrelatives who live together, as well as servants and lodgers who cooperate in some common activities, are usually classified as household members, whereas non-resident kin may often be affiliated to another household unit. Such a situation is not uncommon in Nepal.

DESCRIBING THE NEPALESE HOUSEHOLD

Among the various surveys conducted in Nepal some have offered definitions of the household, two such definitions are as follows:³

... a combination of persons related or unrelated by blood, who share income, expenditure and also a common kitchen, apart from living under the general guardianship of the head of the household. The head of the household refers to the member of the household who is de facto responsible for managing the household and making household decisions.

The household comprises the farmer and other members of the family, is both a consuming and producing unit, ... Households are often under the management of a single person, but sometimes operate collectively. Members normally live and sleep in the same place, share meals and divide household activities.

Other writers have chosen to describe a 'typical' Nepalese hill-farming household as in a recent report by UNICEF (1987:50). The 'typical household' is based upon a parent couple with their married sons and the latter's nuclear families. Daughters usually leave their parental home on marriage. Cassels et al. (1987) provide household profiles of 'poor' and 'less poor' households in an attempt to indicate the diversity of household types found in their survey area. Attempts at definition and description of 'typical' households is not under contention as long as some account is made of the extent to which households may or may not differ from this picture. This caveat is justified from the data presented below.

The basis for the following discussion is data taken from a survey of farmer preferences for different maize varieties carried out among seventy nine households in the LAC ECA.⁴ The local view of the household, gained during this survey, fits with the UNICEF description. When asked to list household membership the respondents named as members of the household those who did not, at that time, have an alternative place of abode in Nepal. Thus husbands, brothers and sons in the army or working away from the area were included in the figures along with resident labourers.

Having given some indication of the 'ideal' household as it is perceived in Nepal I shall now examine how in reality many households diverge from the 'ideal', using data from the maize survey as examples.

HOUSEHOLD COMPOSITION IN THE MAIZE SURVEY DATA

A cross-section of households in a Nepalese village at a particular time would reveal a wide divergence from the 'typical' household described above. This is due to a number of factors, not least the developmental cycle through which domestic groups pass.⁵ It is to this cycle that I first turn.

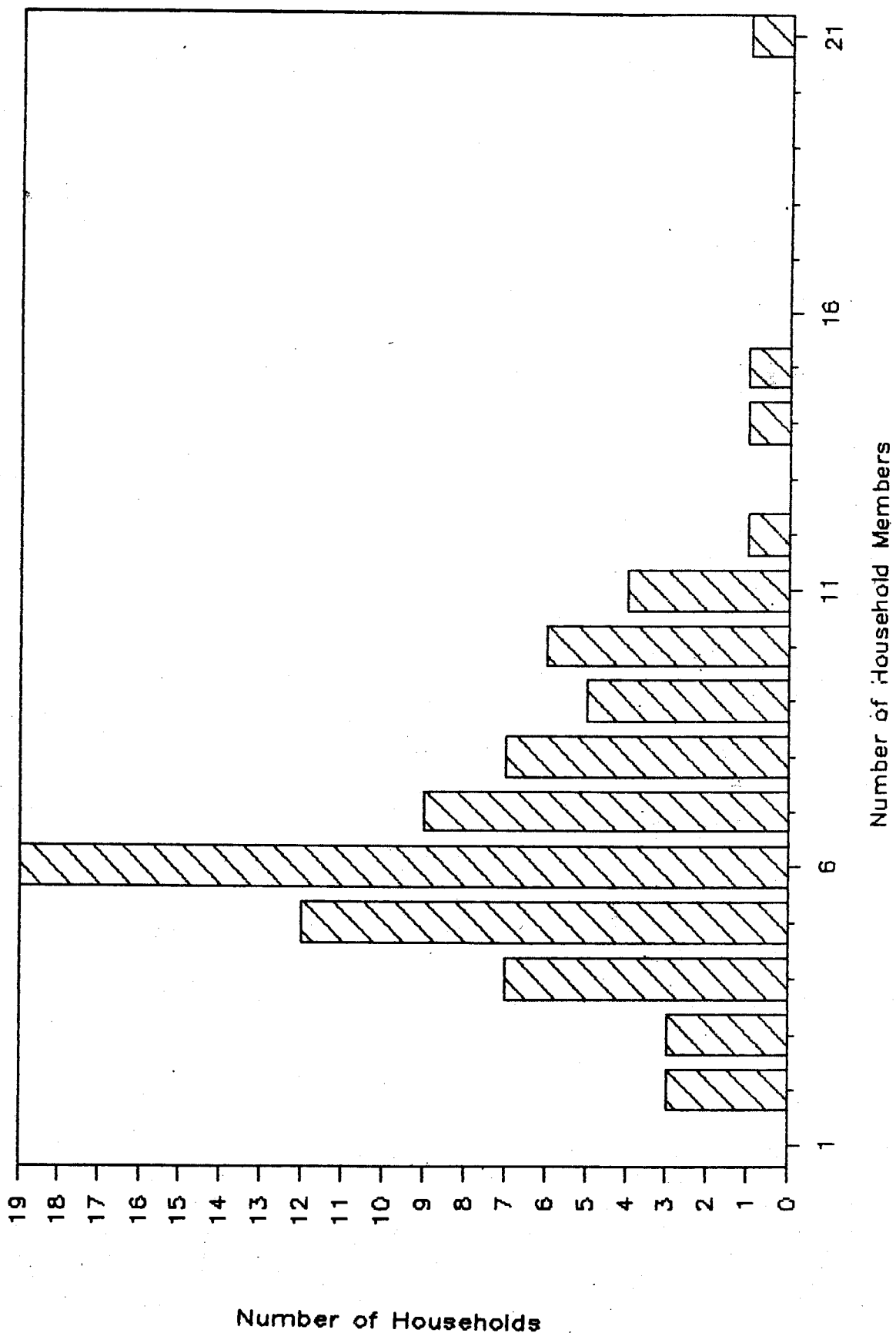
The Developmental Cycle of the Household

The data from the maize survey, presented in Figure 1, show the variation in size of household in the sample population with the largest household possessing twenty one members, the smallest two. This large variation suggests that we are looking at households at different stages of development. For example, in the four households below:

1. Mr. Subedi is 25 years old, his wife of 18 is the only other member of his household.
2. Mr. Gurung is 68, his household is made up of his 59 year old wife, two daughters of 27 and 9, four sons aged 34, 32, 25 and 12, a daughter-in-law of 30, a grand-daughter of 4 and two grandsons aged 4 and 3 months.
3. Mr. Gurung is 80 years old, his wife of 70 is the only other member of his household.
4. Mr. Gurung is 58, his household includes his 60 year old wife, 20 year old daughter and a worker, Mr. Dhana Petri Paudel who is 55.

Only case number two fits the picture of the 'typical household' given above. Cases one, three, and four appear as 'remnants' of the ideal extended household unit. Large households may split for a variety of reasons: intra-family discord or, perhaps, a shortage of land or resources to support large numbers; this will cause young married couples to break from the parental home as happened in case one. It is clear from the data collected that households with relatively large landholdings, or

HOUSEHOLD MEMBERSHIP



access to off-farm income, were most likely to support a large number of members. Indeed, twenty two of the twenty six households with more than eight members had access to non-farm income, usually in the form of an army pension or salary.⁶ The household described in case two can be taken as an example: this household has twenty seven ropani⁷ of land and an Indian Army pension of Rs. 650 a month. The average amount of land per household in the ECA is eight ropani.

Off-farm income can provide a resource base from which additional labour can be hired as in case four, a household with only one daughter and no sons. The daughter was earning a wage as a school teacher and her father was in receipt of an army pension.

The household in the sample with twenty one members has a small amount of land and serves to illustrate the importance of off-farm income as well as large landholdings in the maintenance of a large domestic group:

5. Mr. Nepali (a Sarki⁸) is 54 years old and spends the majority of his time working as a carpenter. He has six sons, aged 35, 32, 27, 20, and 12, two of these are in the Indian army, one works as a watchman in India and another works in a vehicle workshop in Pokhara. He has one daughter at home aged 7. The rest of his household is made up of four daughter-in-laws and eight grandchildren. He owns 7 hal⁹ of khet land and 4 hal of bari land which the female members of the household manage.

These five cases are all taken from male-headed households. But twenty percent of the households surveyed were female-headed. These remnant households also diverge from the 'typical' case.

6. Mrs. Chapagain is 38 and a widow. Her household is made up of a daughter of 14 and two sons of 20 and 12.
7. Mrs. Pun is 33, her 37 year old husband is in the Indian Army. They have three sons of 13, 12, and 8. Her husband comes home on leave about every eighteen months so she is the household head at the present time.

Widowhood or temporary male migration for employment alter the composition of the household leaving a woman as temporary, or permanent, household head.

Three further cases can be taken to illustrate how households can differ from the 'typical' household. Two out of the households interviewed had married daughters in residence. In both cases the daughter's husband was in the Indian Army and the girl had returned to her natal home while her husband was away.

The third case is of a father providing free seed and labour to his daughter's separate household while her husband was in India. Thus the division between the two households was blurred through the sharing of resources.

Out of the seventy nine sample households only twenty eight fit the UNICEF 'typical' household. For six of the twenty eight a son was the de facto household head with the father still in residence. It is to the question of the definition of the household head that I next turn.

THE HOUSEHOLD HELD

The majority of surveys require a household head to be named who is usually treated as the key informant. Indeed, the first definition of the household quoted above described the household head as being responsible for managing the household and making decisions. The household head, in the Indo-Aryan patrilineal ideology, tends to be assumed to be the eldest male in the domestic group.¹⁰ But evidence shows that the headship may not always fall to the eldest male. A man whose children have all married may 'retire' from the position, turning it over to one of his sons. In these circumstances the man ceases to exercise the rights and duties of household head but continues to exercise those obligations appropriate to a father. Although kinship may be a factor in the ordering of household personnel the role of husband/father (and indeed wife/mother) can often be distinguished from that of household head.

The list of household heads recorded in the maize survey were those names taken from lists of LAC cooperator farmers, and where the household was not on the list the person was defined by the members themselves as their 'head'. Some cases serve to show the diversity of household heads in the sample population.

6. Mr. Chhetri is 30 years old. He is listed as his household's head. He is a primary school teacher. His household is made up of his 30 year old wife, 55 year old father, 50 old mother, 28 year old brother who is away in the Indian Army, 25 year old sister-in-law, 2 daughters aged 10 and 8, a son of 6 and two nephews aged 4 and 5.
7. Mr. Chapagain, the household head, is 53 years old. His household consists of his wife of 45, a daughter of 16, three sons aged 26, 19 and 13, a daughter-in-law of 24 and a 4 year old grandson.
8. Mr. Gurung is 56, he is the household head. His wife of 55, daughter of 18, a son of 37 who runs a shop, a son of 26 in the Indian Army, a son of 15 who is studying, a daughter-in-law of 37 and two grand-daughters of 15 and 12 and a grandson of 11 make up his household.

The household head in cases seven and eight is the same age as the father of the household head in case six. They are all listed as engaging in agriculture as their main occupation. To be a school teacher is a respected position in village society, thus Mr. Chhetri in case six may be performing the household head role because of his education and presumed ability to deal with outside bodies such as agricultural centres.

9. Mrs. Pun is 60 years old and a widow. She heads a household made up of her two daughters aged 25 and 18 and her three sons aged 30, 27 and 21.
10. Mrs. Pun, a widow of 57, is her household's head. She has a 25 year old son working in Hong Kong. But she has a 16 year old daughter and two sons aged 30 and 21 at home.
11. Mr. Paudel is 27 and the household head. His 48 year old mother, a sister of 17, brothers of 22, 15, and 13, plus his wife of 26, two daughters aged 9 and 2 and a 9 month old son, make up his household.

The mothers in cases nine, ten, and eleven would all appear to be in a similar situation but two are designated household head, one is not. The fact that cases nine and ten are Tibeto-Burman households and case eleven is an Indo-Aryan household may be important.¹¹ Data collected in a small survey of female-headed households in the Brahmin (Indo-Aryan) village of Tapu confirm the view that certain characteristics of Brahmin female household heads may be defined:

Table 1
Household Composition of Female-Headed Brahmin Households in Tapu
(October 1988)

No.	Age of Household Members				
	Woman Head	Husband	Daughters	Sons	Other
1.	24	29 Indian Army	8	3	m-i-l 63
2.	45	-	16, 9, 6	15	
3.	38	-	14	20, 11	
4.	33	33 India	5, 4	10	
5.	40	44 India	5	2	sister 32
6.	25	30 working elsewhere in Nepal	7, 2	4	
7.	32		13, 10		
8.	30	39 India	13	7, 4	m-i-l 60

All the women in this list are under forty, none has a child, and more particularly a son, over twenty. It may well be the case that as the sons grow older they will assume the household headship. An exception to this general rule could be seen in the following case:

12. Mrs. Chapagain (Indo-Aryan) is 50 years old. She has three sons aged 30, 25 and 16 the eldest of whom is working in India and a daughter-in-law aged 25.

However, this woman's husband had died only a month before the interview. One may suppose, on the evidence presented above, that one of the sons will become the household head in the near future.

An important group of female-headed households are those headed by women whose husbands are working away from home, in particular those who are in the Army or 'civil service' in India or Saudi Arabia.¹²

13. Mrs. Pun is 33, her 37 year old husband is in the Indian Army. She has three sons aged 13, 12 and 8.
14. Mrs. Pun is 23, her husband of 33 has been working in Saudi Arabia and he is now in Kathmandu looking for more work overseas. They have no children.
15. Mrs. Pun is 30, her 38 year old husband is working in Saudi Arabia. She heads the household made up of three daughters aged 12, 8, and 6 and her son aged 10, and her husband's 70 year old father and 65 year old mother.

These women may find themselves as *de facto* household head for more than ten years. The evidence from the maize survey showed that these particular women did not appear to be constrained in their decisions concerning the adoption of new technologies and the development of their farms while their husbands were absent, as has been thought by some commentators (Schroeder 1980: 45).

A final case illustrates how problematic the designation of household head can be.

16. Mr. Chapagain (aged 48) is a lawyer in a town near to his home village. He resides for the majority of the time in the town. His wife (aged 35) and children (three daughters aged 18, 13, 12 and two sons aged 16 and 4) reside in the village.

This household was interviewed in a household survey undertaken by a LAC economist in 1981. At that time Mr. Chapagain was listed as being the household head. This household was interviewed again, seven years later, as part of the maize survey, then Mr. Chapagain's wife was listed as the household head. The household's domestic arrangements had remained the same during the seven years. Mrs. Chapagain had been twentyeight

in 1981 an age clearly not unsuitable for household headship as indicated from the data above. The difference could result from a number of factors. Firstly, there has been a tendency for enumerators to look for male household heads, even when they are absent, and thus Mr. Chapagain would have been assumed to hold the position. Secondly, there is the influence of my own gender on the second survey result; the field assistant knew I was interested in interviewing female-headed households. However, Mrs. Chapagain did acknowledge the title of 'household head' since she was solely responsible for the day to day running of household affairs. There is, of course, no reason why the *de facto* household head should not change through the developmental cycle of the domestic group. This case serves as a cautionary tale against putting too much emphasis on looking for the household head.

To discuss 'the household' can also obscure variation within as well as among these units. Folbre (1986:5) criticises economists for '[t]reating the household as an individual by another name, they overlook the importance of conflict and inequality between household members.' It is to the general question of intra-household variation that the discussion now turns.

INTRA-HOUSEHOLD VARIATION

A number of writers, Jiggins (1984:160) and Ellis (1988:13) for example, note the body of data that exists on the structural difference in the economic position of men, women and children, across class and ethnic lines and the implications which this has for policy. There may be important differences in the economic relationships and responsibilities of and between people within the household, particularly between men and women. McKee (1986:191), for example notes differences which occur in responsibilities for day-to-day farm management; agricultural investment decisions; and choices about household consumption of agricultural commodities.

A case can be taken from the data gathered from the maize survey which reveal that women and men have different approaches to the assessment of the quality of maize varieties. This fact is borne out in the work of Ashby *et al.* (1987:5) on beans where they found that women had different criteria for choosing the variety to be grown. Women viewed a small grain type as desirable from the point of view of the subsistence and consumption objectives of the small farm. Men selected beans for size, with a view to marketability. This orientation is very similar to that found in the maize survey. Thus, it was found that varieties actually grown consisted of a compromise between the requirements of men and women.

In most communities throughout Nepal much of the agricultural work, particularly in the hills, and many of the cottage industries are carried out by women.¹³ Acharya and Bennett (1979:63) in their study of the status of women in Nepal note that anthropological studies indicate that

the census reported activity rates for women are gross underestimations. Thus, the woman's role in various farm activities is important not only because of her key place in farming but also because many of the activities performed are her responsibility. Consequently, decisions regarding fodder collection or compost applications, for example, tend to be made by women rather than men. This was substantiated in the study by Acharya and Bennett, which showed that women made forty two percent of agricultural decisions alone, and twelve and a half percent with men (1982:61).

It is not surprising, therefore, that during the maize survey the most fruitful interviews were those in which a number of household members participated. Women and men tended to have precise knowledge on different areas of maize cultivation and processing. Indeed one woman interviewed with her thirteen year old son laughed as he corrected her figures on landholdings, but she knew the details of the amount of seed sown, and the growing and processing properties of the different varieties.

Shrestha et al. (1988) found in their study of women's participation in agricultural decision-making that while women may share in general agricultural production decision-making processes, men dominate the decisions made about participation in extension activities. Thus, it is not only the nature of the caste or ethnic group which may influence the organisation of the household, but the areas of involvement in decision-taking will vary according to the subject under consideration.

The extent to which women and children have a say in the decisions taken in male-dominated households will, however, vary between castes and ethnic groups.

THE INFLUENCE OF CASTE AND ETHNICITY ON HOUSEHOLD COMPOSITION

'Caste' refers to the occupational grouping of peoples brought to Nepal by Hindu immigrants from India in about the eleventh century. These were divided into high castes (Brahmins and Chhetris) and lower or occupational castes (Damai, Kami, and Sarki, for example). The hill ethnic groups (Tibeto-Burman groups such as Magar, Gurung, etc.) came under the new Indo-Aryan rulers but were never fully integrated into the caste system. Discrimination on the basis of caste has been formally outlawed by the Mulki Ain (National Code) of 1963. Although it is illegal as a basis for discrimination the caste system is still an important influence in Nepalese society as a number of commentators have shown.¹⁴ Seddon (1987:149), for example, describes the way in which Gurungs, Magars, Limbus and Rais have received preferential treatment as regards recruitment into the Army, particularly the British Army, while Brahmins and Chhetris, traditionally higher castes, may be more highly regarded by employers. This picture is supported in the work of Smith (1986) for Bhojpur.

Intra- as well as inter-household differences may vary between castes and ethnic groups. It has often been reported that women of Tibeto-Burman origin (Gurungs and Magars, for example) tend to enjoy a more egalitarian relationship with men, and have a stronger tradition of female entrepreneurship than women in Indo-Aryan groups (Brahmins and the occupational castes). This assertion is supported in the work of Acharya and Bennett (1982). They classified communities on the basis of observations made about the work of men and women, and the extent to which women were limited to the household subsistence economy or were able to participate in the local market economy. They show that the Tibeto-Burman socio-cultural framework provides greater scope for female participation in the household decision-making process. In their analysis of factors affecting female decision-making they found that the image of the female sex and age at first marriage were significant. Thus women's participation in subsistence production, local market activities and employment outside the village all have a positive effect on women's decision-making role. Of all the variables employment outside the village was the most important, a condition most likely to be found in the Tibeto-Burman groups. Panter-Brick (1986:142) observed a difference in organisation and household composition between Kami and Tamang households in Salme which fitted with the picture drawn up by Acharya and Bennett. Panter-Brick's analysis contrasts women's experience of work and child-bearing among the Kami and Tamang households.

'Caste' may be related to 'class', as Seddon describes (1987:144-153), because of differential access to resources which reinforces inequalities. Bell and Delobel (1987) found that landholdings among the occupational castes were smaller and of inferior quality to those of the Gurungs in the village they studied. The tendency for occupational castes to live on the outskirts of settlements, often on marginal land, was also found in the maize survey (Seeley, 1988:3). Balogun (1987:2) describes the relatively low number of fodder trees taken by occupational castes from nurseries compared to the numbers taken by Magars and Gurungs; this he attributes to the lack of resources of the former groups. It stands to reason that certain groups, households with access to Army pensions for example, will be able to cope with adversity, and indeed support larger households than those dependent on the produce from a small amount of land. There is, as has been pointed out, a relationship between certain ethnic groups and army service.

The data from the maize survey do not appear to support this assertion by showing a significant difference between the groups. The distribution by caste and ethnic group of the sample population is shown in Table 2, the average household size by caste and ethnic group is shown in Table 3 (the distribution of castes and ethnic groups for the sampled panchayats is given in the appendix).

Table 2
No. of Households by Caste in Maize Survey Villages

Village/Group	Inod-Aryan						
	Brahmin	Kami	Damai	Chhetri	Gharti	Sunar	Sarki
Puranogaun	2						
Langdi		2	1				
Lespar							
Phalehalne							
Pokhare	2			1			
Tapu	7						
Sidhane	1	3					1
Kudbidanda					1	1	
Damdame							
Harpan	2						
Tamagi		1					
Bhadaure	1						
Total	15	6	1	1	1	1	1

Village/Group	Tibeto-Burman		
	Gurung	Magar	Newar
Puranogaun		11	
Langdi	4		
Lespar		13	
Phalehalen	5		
Pokhare			
Tapu			
Sidhane	5		
Kubdidanda	6		
Damdame	2		
Harpan			
Tamagi	3		
Bhadaure	3		1
Total	28	24	1

Table 3
Average Household Size, by Caste and Ethnic Group for the Maize Sample
Households

Group	Average Household Size	No. in Sample
<u>Indo-Aryan</u>		
Brahmin	7.2	15
Chhetri	11	1
Gharti	6	1
Kami*	6	6
Damai*	6	1
Sarki*	21	1
Sunar*	15	1
<u>Tibeto-Burman</u>		
Gurung	6.6	28
Magar	6.1	24
Newar	7	1

*Occupational castes.

These averages, particularly for the first three groups hide a great variation in household sizes as Figure 1 revealed. Even so, the lack of variation between groups, and in particular the large households supported by the occupational castes, seems likely to be a product of a bias in the sample. The Sunar household, for example, ran a prosperous goldsmith business in Pokhara. The majority of sampled households had larger than average landholdings for the LAC ECA which suggests something about the nature of farmers who are likely to be obtaining improved varieties from LAC, rather than of the population as a whole (Seeley 1988:6). A number of factors are clearly at work which are hidden in the simple figures given above. Bell and Delobel (1987:23), for example, found that the occupational castes in the village they studied had slightly larger families and a larger potential labour supply than the Gurung households because of long term migratory employment among the Gurungs. This finding indicates again that the assumption that shortage of land will restrict household size to be incorrect.

It is obvious that the variations in household composition in Nepal described above will influence the data collected in 'household' surveys. It is worthwhile reflecting upon the particular areas in which care must be taken in data analysis and in the comparison of results from different households.

THE IMPLICATIONS OF HOUSEHOLD VARIATION FOR DATA COLLECTION

Caste and Ethnicity

The influence of caste and ethnicity, as described above, is not clearcut. Although caste and ethnic group affiliation may provide a useful indicator of the economic condition of households it will not necessarily provide a wholly reliable method of assessing the composition and resources of households identified merely by surname. Bell and Delobel (1987:27) note that 'just as there are a few Gurungs whose resource position seems more appropriate to the occupational caste status, a number of Damai and Kami farmers through outside employment were not stuck as landless labourers'.¹⁵ Likewise, Cassels *et al.* (1987:11) found that it is misleading to classify households earning considerable amounts of grain and corn from their occupational services as poor because of their negligible land holdings. They found that some tailors and cobblers may be able to cope better with the low production of food from their own land than their landholding would suggest. It is impossible to predict with any confidence what the differences between the groups will be in any given situation. However, it is apparent that differences do occur, for a variety of reasons, and these must be determined and taken into account.

The Developmental Cycle

The developmental cycle of the domestic group presents a number of obstacles to the unwary data-collector. To begin with there is the problem of the 'invisible members'. Fricke (1986:18) in his study of Tamang village states that even when members are away from the village for extended periods they are expected to contribute wages to the common good of the 'cooking hearth' to which they belong.¹⁶ Indeed, as Netting notes (1986:19) in some cases the most important members of a household are those who are not resident at all, simply because of the remittances they send back, yet they are the ones who can easily be missed in data collection.

Secondly, it is apparent from the above discussion that household composition affects the way in which a household organises resources. Chayanov's (1966) work on Russian farmers illustrates how agricultural decisions will be influenced by the composition of the household at the time when the decision must be made. A household will weigh up its needs against the labour required to fulfil them. Barlett (1980:145), using data from Costa Rica, shows how the age of the oldest male in the household influences the decision to take up a new technology. It stands to reason that if one factor, such as age, can influence household decision-taking, factors such as the number of teenage children available or the absence of a key adult will also have an important effect.

Panter-Brick (1986), in her work on Tamang and Kami households in Salme, describes cases of married Tamang women living with their natal family. The reason given was shortage of labour in their natal households. The endogamous nature of the majority of Tamang marriages in the village she studied meant that few women residing in the marital home were more than a few minutes from their natal home, and thus in a position to provide labour when needed. This was not true for the Kami women who were not only more confined to their own domestic space than the Tamangs because of differences in social organisation, but they had all married into the village from outside and thus could not visit their natal homes regularly. This illustrates, once more, the important influence of ethnic group.

Household Headship and Decision-Taking

Netting (1986:xxv) has commented that western demographers and economists have tended to presuppose a male household head and bread winner in the public domain with the woman as housewife occupied with consumption, reproduction and child care. The western concepts of 'housewife' and 'household head' have been adopted in Nepal, as in so many other developing countries, without reservation; they carry the western bias connoting only a limited domestic role for women. The data above, and indeed the data on household decision-making and organisation in Nepal in general, show such an assumption often to be incorrect. A search for a 'household head' wholly responsible for decision-making is, in the Nepalese context, misguided.

It was noted above that Schroeder (1980) found women heading households in the absence of their spouses to be restricted in the range of decisions that they can take. It can equally be argued that male household members rely on their wives and older children for assistance in decision-making. It is apparent that data collected from one member of a household may not be accurate in all areas simply because the farm enterprise is a shared experience and the knowledge of that farm is also shared. Indeed, decisions tend to emerge from households through negotiation, disagreement, conflict and bargaining. A household head may have the final word, out of respect for seniority and experience, but the decision about agricultural inputs, for example, will seldom be the result of her or his knowledge alone. The extent to which women and children have a say in the decisions taken in male-dominated households will, however, vary between castes and ethnic groups.

It will be apparent from the above discussion that to treat households as comparable undifferentiated wholes overlooks significant differences in their composition and behaviour.

FINDING THE HOUSEHOLD: AN APPROACH TO THE PROBLEM

Although survey research is not always inappropriate when general quantitative data are required its value can be greatly enhanced by other

methods of data collection which provide qualitative data. The method which is particularly appropriate for household description is that of 'case studies'.¹⁷ As Conlin (1981:58) notes 'an intensive study of a few families or individuals can give social researchers a much greater understanding of the processes which lie behind the statistics given by surveys'.

Cassels et al. (1987) utilised qualitative data from case studies to supplement the quantitative data gathered in their study of coping strategies of farmers in Eastern Nepal. Detailed information was collected from some of the sample households of different wealth and food deficit groups. In particular, households of varying sizes and with varying ratios of dependent and non-dependent household members and households that relied entirely on off-farm labour for survival, were compared with those who only depended on the availability of off-season work. These qualitative data were then used to clarify the quantitative data particularly when discrepancies occurred; for examples when a small landowning household supported a large number of members due to off-farm income. Extracts from the household profiles collected were then used to illustrate the final report rather than merely trying to produce an all embracing picture of a 'typical' household to cover the whole sample. A similar approach proved to be useful in a study of urban households in Lusaka (Zambia) (Seeley, 1987).

Case studies do, however, require a few staff to be trained in conducting indepth interviews rather than merely collecting quantitative data for a simple questionnaire. In the Cassels study some enumerators were trained to stimulate discussion with all household members and record all their responses on a range of topics. This approach places considerable responsibility on the individual enumerators and demands the skills more appropriate to anthropological investigation, based largely on observation and informal interviewing techniques, rather than those of a census taker. Such skills will not always be available. Nevertheless, five or six case studies included in a survey of fifty or sixty households will often be enough to give additional information on variations within the sample that the quantitative data may not explain. Hill (1986:82) supports this view by commenting on the value of distinguishing several household 'types' to overcome the problems of hiding household variation, even if this can only be achieved by using a bigger sample.

Even with limited staff valuable data can be gathered by recording a household member's life history, or the story of a land dispute. Old people, in particular, who may have the time to talk to someone they recognise as being interested in what they have to say are a valuable source of such information. The simple lesson is: no data are superfluous, all add up to a more rounded picture of the household.

CONCLUSION

The aim of this paper has been to show that even within the Nepalese context of patrilineal kinship groups organised around the family the concept of the household can be little more than a flexible yardstick with which to measure social organisation. However, even if the yardstick is unreliable one cannot deny that selecting the household as a common focus for social and scientific research and analysis has practical and theoretical justification, households are 'the next biggest thing on a social map after the individual' (Hammel 1986:30).

The lesson should be to think carefully about the terms and definitions used in any survey or report and the categories they embrace, as well as the variation they hide. It is clear from the data presented above that statistics on households need to be treated with some caution. There are 14,000 households in the LAC ECA, it is worth reflecting upon the diversity that simple figure hides.

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NOTES

1. The reports published by the Centre for Economic Development and Administration at Tribhuvan University, the Socio-Economic and Research Extension Division of the Nepali Government, Ministry of Agriculture and, indeed, the technical reports of Lumle and Pakhribas Agricultural Centres in Nepal are cases in point.
2. See for example, Guyer (1981), Smith (1973), and Yanagisako (1979).
3. APROSC (1984:14) and Shrestha et al. (1988:9) respectively.
4. See, Seeley (1988).
5. The 'Development Cycle of Domestic Groups' was first described in detail in the work of Fortes and Goody (1958).

6. For the 48 households in the sample from four of the five sampled panchayats: Bajung, Deorali, Deopur and Keng, 35 percent of households had an off-farm income (Seeley, 1988:9). A panchayat is a political division usually covering a village and its surrounding area, or a collection of small villages.
7. One ropani is approximately 500 square metres.
8. Sarki is one of the occupational castes. The term 'occupational' comes from the traditional work practiced by Kamis, Damais and Sarkis: blacksmiths, tailors, and leatherworkers.
9. One hal is the amount of land which can be ploughed in a day. Khet land is irrigated land, bari land is rainfed land.
10. See, Pokhrel (1982:27) and Reejal (1979:107-8).
11. The implications of this division are discussed in more detail below.
12. 'Civil Service' is a general term which is used to describe all sorts of employment under taken in the host country. This employment usually takes the form of 'watchman' or 'security guard.'
13. This point has been made by a number of commentators see, for example, Bajracharya and Jansen (1988) and the papers presented at an IAAS/USAID workshop on 'Women in Farming' held at Rampur, Nepal, 4-7 October 1988.
14. See, for example, the studies on the status of women edited by Acharya and Bennett (1979).
15. Bell and Delobel report that when a statistical analysis was run on the survey data to determine socioeconomic groups for agricultural trial planning three Damai and two Gurung households (out of a total of seventy) crossed over the expected dividing line. The categorisation was based on landholding, land type, outside income and labour availability.
16. Fricke notes that the Tamang use 'the cooking hearth' to define the household. The members of a social group using one hearth when resident constitute, in the folk view, the 'household'. This Fricke adopted as his own definition.
17. This method is described in detail by Carter (1986).

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APPENDIX

The distribution of ethnic groups in the LAC ECA of the sampled panchayats as projected for 1988 is given below.

Ethnic Groups in the Sampled Panchayats

(Estimate of number of people)

Group	Keng	Bajung	Deorali	Deopur	Bhadaure
Brahmin	20	980	364	1325	1120
Chhetri	13	364	153	345	92
Magar	2364	19	599	3	18
Gurung		76	387	43	1628
Damai	25	316	261	39	79
Kami	30	199	208	26	582
Newar					18
Gharti					92
Jogi		363		103	
Thakuri	383			187	
Sarki	149		92	59	127
Total	2452	3175	2064	3135	3756

Cultural Knowledge of Hygiene and Sanitation as a Basis for Health Development in Nepal

Richard Burghart

INTRODUCTION

Resort to folk competence in health is a recent and important trend in development policy. In the field of primary health care this trend has gained force in the recognition of the cultural constraints within which any community health programme must operate. Recent research in medical anthropology has focussed on the way in which local people, acting in the light of their cultural values and folk knowledge, take up the medical facilities offered to them. From the bio-medical point of view this folk knowledge may be at variance with medical science; but even in those cases in which folk knowledge is imprecise or erroneous from a bio-medical point of view, such knowledge may still encourage adaptive behaviour. Certain public health measures in nineteenth century England were provoked by ideas of illness transmission (e.g. theories of contagion and miasmas) which with hindsight proved to be erroneous, yet these measures were bio-medically adaptive and led to improved sanitation arrangements in metropolitan areas. This paper reports on an investigation into the contexts in which folk knowledge of hygiene and sanitation in Nepal might play some role in the promotion of public health.

The investigation focussed particularly on folk knowledge of water-related diseases and of water management. The reason for this lay in the fact that the key for any improvement in public health in Nepal lies in the prevention of illness and that in the field of preventive medicine the proper management of water resources is of central importance. Numerous illnesses in Nepal are related in some way or other to water: either to drinking water (e.g. diarrhaeal diseases), bathing water (e.g. skin, eye and ear infections), or to bodies of water which serve as breeding places for the mosquito vectors of malaria and eosinophilia. Throughout Nepal may be found culturally specific ideas and practices about the importance of drinking and bathing water for the well-being of the person; and this knowledge informs their competence in hygiene and health care. The aim was to relate this knowledge to bio-medical observations on the intersection of human behavioural patterns and water-borne pathogenic agents.

METHODOLOGY

Fieldwork was carried out at the pilgrimage centre of Janakpur, administrative capital of the Dhanusa district, in the eastern Tarai of Nepal. Until the 1950s Janakpur was a cluster of three rural hamlets,

comprising the farmers, artisans, priests and clerks who worked for the three main monasteries that controlled the land. A small bazaar, only three or four streets deep, catered to the needs of local people and pilgrims. After independence in India, Janakpur expanded rapidly as a commercial centre in the import-export trade. Further expansion occurred in the 1960s with the administrative reorganization of Nepal in which Janakpur was designated capital of the Dhanusa district. With a 60% increase in population in the last two decades Janakpur is Nepal's second fastest growing town. Yet the town has developed largely along the main roads between the monasteries and the railroad station, gradually enclosing and leaving untouched the rustic neighbourhoods of poorer agricultural workers. Moreover, the entire western side of the 'town' is still taken up with ponds and paddy fields. Given the necessity of carrying out research in a town (where sufficient electricity would be available for the bacteriological tests), Janakpur had the advantage of being as much rural as urban in its population and life style.

The town, comprising some 15,000 people, affords a great variety of water sources -- both of drinking water (tubewells, open masonry wells and improved municipal water supply) and bathing water (tubewells, open masonry wells, improved municipal water supply and pond water). Water was not necessarily a problem for local inhabitants: neither in its provision nor its purity. The diversity of water sources of variable quality provided the opportunity to record, therefore, how local people evaluate water and observe what sort of water they prefer for what sort of purpose. Despite the abundance of potable water, the prevalence of water-related diseases was high. Dhanusa district has the highest incidence of malaria (and quite possibly eosinophilia) in the kingdom and diarrheal diseases are commonplace. In the recent past the region was frequently visited by cholera. In short, Janakpur was an excellent research base at which to investigate people's knowledge about water and disease.

Although administratively part of the mountainous Kingdom of Nepal, the town of Janakpur -- together with the eastern Tarai districts -- is ecologically an extension of the Gangetic basin. The land, only about one hundred metres above sea level, is more or less flat with a very slight north-south tilt from the base of the Siwalik foothills of the Himalayas to the Indian frontier state of Bihar. The climate is tropical, with a hot, dry, windy summer (April to June), a rainy season (July to September), a cool dry season (October to January) and a short spring (February to March). The upper reaches of the Tarai have sandy or gravelly soil where seasonal rivers drain the southern slopes of the Siwalik hills during the monsoon, but closer to the Indian frontier the soil is clay-like, able to retain surface water, essential in the management of paddy fields and in the rain-filled tanks used for bathing, washing and irrigation. On the whole the soil has retained some fertility as nutrients are leached from the soil in the mountains. Altogether the eastern and western Tarai of Nepal account for only 15% of the land mass of the kingdom, but it is home to 31% of the people, producing 59% of the gross national product and 76% of the government's revenue.

From a cultural point of view the majority population of Janakpur, as of the Dhanusa district, is Maithili-speaking. There are approximately one million Maithili speakers in Nepal, making it the kingdom's second largest language group. Another nineteen million speakers live in northern Bihar, India. The language is cognate with Bengali, Bhojpuri, Magahi, Oriya and Assamese; and related lexically to the languages of western India: Nepali, Avadhi, Punjabi, Kashmiri, Rajasthani, Gujarati and Marathi. Like all these Indo-Aryan languages, it has been subjected to modern Hindi and English as administrative languages. The Maithil people have been living in the eastern Tarai districts for more than one thousand years; since the 1950s the district has been increasing settlement by Nepali speakers from the hills who were attracted to the abundant land, once malaria had been brought under some measure of control. Most participants in the survey were Maithili by mother tongue, with a few Nepali speakers and one Newari. These linguistic differences are important in the ethnic politics of Nepal and India, but of little cultural significance. The similarities of Indo-Aryan peoples are greater than their differences and neighbouring languages are often mutually intelligible.

Over a period of one calendar year local knowledge of hygiene and sanitation was recorded as were local water use practices. Part of the information was collected in the course of observations in five households in which ties of fictive kinship were established; the other part of the information was collected in a survey, conducted in 174 households on the northern side of town. The northern side comprised several hamlets and neighbourhoods which offered within several acres of residential land a population of considerable diversity in religion (Hindu and Muslim), mode of livelihood (landlords, fieldhands, builders and craftsmen, merchants and clerks), castes (the high caste Maithil Brahman and Kayastha as well as various ranks of untouchables from the high, such as Sunri, to the middlin, such as Khatuve, to the abject, such as the Cobblers). The economic contrast ranged from several families of wealthy landlords and merchants living in three story brick homes to the desperately poor neighbourhoods in which entire families crowded into the single room of a mud hut. Most of the upper caste families were highly educated: either in a traditional vein (Sanskrit degrees from Benaras) or a modern vein (university degree for the men, matriculation for the women). By contrast, many of the untouchable families were uneducated and illiterate.

At the same time that information on local knowledge was recorded, samples of fresh and stored water were collected which were subsequently analysed for the presence of *Escherichia coli*. *E. coli* is a coliform of the intestinal tract which serves as an indicator bacteria of faecal contamination. That is, if this particular faecal coliform is present in a water sample then one might also suspect the presence of other excreted pathogenic agents including viruses (e.g. poliomyelitis, hepatitis), bacteria (e.g. salmonella, shigella, cholera), protozoa (e.g. entamoeba, giardia) and helminths (e.g. ascaris). Much has been written about the suitability of *E. coli* as an index of faecal contamination. Let me sound here four cautionary notes. First, *E. coli* are natural inhabitants of the

intestinal tract of all warm-blooded animals; thus a bacterial analysis of the bathing or drinking water does not indicate the extent to which the faecal contamination is of animal or human origin. Second, *E. coli* are sensitive to temperature, sunlight and to other microbial life. In tropical surface waters they are subject to a rapid falling-off. Certain pathogenic bacteria and helminth eggs do not, however, experience such a rapid mortality; hence pathogenic agents may still be present in the water, even though the *E. coli* indicators have diminished considerably. Third, it must be remembered that disease is the response of the human organism to a pathogenic agent. The presence of such agents in the environment does not imply that people will fall ill. Rather other factors, such as the age, nutritional status and immune response of the person, must also be taken into account. Fourth, there is some disagreement as to what standards of water purity, given the politico-economic constraints and opportunity costs of other forms of investment in public health, are attainable in poor countries with tropical climates. World Health Organization guidelines recommend for developed countries in temperate climates that up to 10 coliforms/100 ml are acceptable for drinking water and ten times that amount for bathing water. What goals are reasonable for health workers in the different ecological zones of Nepal is, however, less clear.

THE POSITIVE QUALITIES OF WATER

Maithil people evaluate drinking water according to seven criteria: taste, turbidity, temperature, freshness, digestive properties, habitual usage and purity. These criteria, together with availability and convenience in collection, determine people's preferences for particular water sources. I discuss them, in turn, below.

Everyone agreed that drinking water should be 'sweet' to taste; no one, however, could describe the elusive quality of sweetness. Even though it was imputed objectively to the water, the evaluation was subjective and metaphorical. The taste should be refreshing and thirst quenching; that is the experience of drinking water should be pleasant, as indeed life should be pleasant. Sweet water contrasts with bitter water, which may also undergo slippage from the literal to the metaphorical: e.g. bitter experience, bitter memories. Bitterness seemed to include both the bitter and the astringent. The avoidance of bitter water underlay some informants' reluctance to drink the treated water of the municipal Water and Sewage Corporation, for it is decontaminated with bleaching powder. Similarly in decontaminating open, masonry wells, people generally used insufficient lime (less than a 1% solution) because the taste would have otherwise been unacceptable. In sum, sweetness not only guided local people's preference for water; it also limited their tolerance of chemically decontaminated water.

Water should be clean and clear (lit. 'devoid of dirt'). Water, which is observed to be turbid may be further described as sandy or muddy. Alternatively turbidity may be noticed retrospectively on the inside rim of the pot after cooking rice. Turbidity is thought to cause digestive disorders. Furthermore, since worms are thought to live in earth, the ingestion of 'dirty water' leads to worm infestation.

Ordinarily water temperature should not be out of proportion to body temperature. Otherwise the body might become shocked by the temperature difference; and shock is injurious to health. Water temperature was also judged in relation to air temperature in their combined effect upon the body. Stored water usually takes on the temperature of the surrounding air, such that it becomes cool in the cold season and warm in the hot season. Water at source, however, emerges from the earth in the winter warmer than morning air and in the summer cooler than morning air. Since health is preserved by remaining in equilibrium with the environment, fresh water is usually preferred because it counter-balances the air temperature in its influence upon the body. Water which has been stored for some time exacerbates the imbalance.

It is important that water be fresh. Water which comes from a source is always fresh. But in collecting and containing water, it 'gathers' thereby becoming stale and losing its positive qualities. Stale water cannot be made fresh; hence freshness is guaranteed only by changing stored water at regular intervals. Most domestically stored water is changed as a matter of course at least once a day: at dawn the water which was stored overnight is thrown out and replenished with water fresh from the source.

Water is thought essential to the proper digestion of food. Although men of affluence may take beer or whisky with their meal in 'hotels', nevertheless at home in the company of their family they usually drink water. Water is not drunk with the meal in sips or gulps; rather all solid food is consumed and then water is taken to enable the stomach to digest (lit. to cook) the food. The work of digestion in a healthy body takes between one and two hours, depending upon the heaviness of the food. Water varies in its ability to digest food. Food which is under-digested leads to diarrhoea; food which is over-digested leads to constipation. As long as diarrhoea is neither inconvenient (does not come 'quickly') nor worrying (entails no vomiting) then it is not thought as bothersome or serious a medical problem as constipation. With constipation foulness is retained within the body, causing illness. Local people claimed that the water in the Janakpur area had much iron in it; predisposing them to constipation. Indeed when I informed local people that I was interested in the quality of drinking water and the prevention of diarrhoeal diseases, some people told me I had come to the wrong place; their problem was constipation.

Drinking water is assimilated by the body such that it comes to constitute the very being of the person. Having integrated this water

In his body, a person's well-being is threatened by drinking water from sources to which he is unaccustomed. People who return home after several weeks abroad are said to appear thin by virtue of their not having been nourished with the water of their native place. Some old men in Janakpur continued to drink the water of their neighbourhood open well, even though they knew that the water of a nearby handpump might be more pure. They thought, however, that to change water at mid-life might shock their body causing them to fall ill. It is always best to drink the water to which one has become habituated.

In its natural, undifferentiated state water is intrinsically pure; yet water also serves as a medium of qualities such that it becomes liable to pollution by water handlers. There are both temporary and permanent sources of defilement. All Hindus experience temporary pollution during which time they may collect water for their own use, but not for others. Periods of temporary pollution include: early morning ablutions, women in menstruation, mothers in the first forty days *postpartum* and families in mourning. Permanent pollution is a fact of life for untouchables; indeed, the range of untouchable castes is defined with reference to those castes from whom local Brahmans do not accept water. While pollution is largely a ritual state, the sources of pollution range from physical waste (faeces) to the inauspicious (death) to the social (untouchability). Pollution largely affects contained water; once such water is polluted, it cannot be rendered pure again. Rather it must be discarded.

WATER AT SOURCE: THE EVALUATION OF ITS QUALITIES

The people of Janakpur have access to diverse sources of water, not all of which are used for the same purpose. These sources include water from handpumps, open masonry wells and the municipal supply ('pani taunki' water) which are used for drinking purposes as well as for bathing and for washing clothes and kitchen utensils. Additionally the numerous ponds of Janakpur are used for bathing and washing, as are two nearby streams, the Jaladh and the Dudhmati. Each of these sources is evaluated according to various criteria: cost of installation or of usage, convenience in collection, proximity to house, quality of the neighbourhood in which the water is found, etc. The purpose of this report, however, is more narrowly defined. I shall consider here only local evaluations of the quality of water at source, and the beliefs and practices connected with the preservation of those qualities.

Tube well water: By tubewell refer to handpumps which are ubiquitous and, without any doubt, the locally preferred source of drinking water. Tubewell water is fresh, and it counterbalances one's body temperature throughout the year. The filters control for turbidity. Moreover, the iron casing is not thought to affect seriously the taste. The only complaint, which is occasionally voiced, is that tubewell water has excessive iron in it; or at least the water, after boiling, leaves a

residue on the cooking pot which people attribute to iron. Water soluble iron is said to predispose one to constipation. This complaint did not, however, affect popular preference for tubewell water. It should be added that most people drink water which has been collected by women and nearly all women prefer handpumps to open, masonry wells on grounds of convenience in the drawing water out of the earth. Hence tubewells were overall best.

Local people did believe, however, that the quality of tubewell water varies seasonally. In the monsoon rain seeps down into the earth taking with it surface contamination which mixes with the 'good' water which rises from within the earth. This explanation, which presumably dates from the time that open masonry wells were commonplace, had some plausibility in the case of handpumps sunk to a shallow depth. Faecal contamination at the pump could be drawn down into the earth along the exterior of the piping and then be drawn into the well at base. Of the tests conducted on tubewell water, however, no evidence of seasonal variation was found.

Some local people were also sceptical for political reasons about the quality of tubewell water. Most public tubewells have been installed with government funds, either special project funds or the regular budgetary provision for sanitation facilities and water resources from the Panchayat Ministry. The cost of sinking a tubewell varies in relation to its depth, for the major costs are the daily wage of the labourers and the length of piping. The necessary depth varies from region to region according to the depth of the water table. In the Janakpur area local people believed that a depth of 125 feet is necessary to ensure that the water is both good and reliable. It is known that the water table rises and falls with the seasons, and that the table is liable to surface contamination. Hence the more shallow a well, the more likely it will go dry in the summer and become contaminated in the monsoon. Yet it is possible to strike water at a depth of as little as thirty or forty feet. As soon as water is struck, local sceptics believed that the contractor is tempted to make a deal with the government overseer to stop work and to share between them the unused pipe and the allocation for labour expenses. Thus I received the unsolicited advice to drink the water of a private tubewell or from a tubewell in the neighbourhood of powerful people; but not to drink the water of poor or untouchable neighbourhoods. In such neighbourhoods the people are too powerless to keep the contractors honest. The well will be shallow and the work inferior; the water will be unreliable in the hot season and contaminated in the wet. Being unable to collect valid figures on the depths of tubewells, I could not separate fact from persuasive fiction; I made no tests of the validity of local scepticism.

Local people were also sceptical of the purity of public tubewells by virtue of the fact that 'anyone' might use such water, and in so doing might contaminate it. Strangers to Janakpur, townsmen from other neighbourhoods and local children could not be counted upon to use the hand-

pump responsibly. By contrast, private tubewells, situated within the courtyard, were protected; and the purity of their water guaranteed by the family who safeguards it.. Considerable tests were taken to ascertain the validity of this observation, and the data suggest that here local scepticism was well-founded. A few family handpumps were highly contaminated, but most met WHO standards for drinking water, and some were more pure at the tap than the municipal water supplied by the Water and Sewage Corporation. Public handpumps, however, were never free of contamination.

The water of open, masonry wells: Local people knew that well water was contaminated by improper use: by letting dirt fall into the well or by children throwing things into the well. But people also recognized that it was by virtue of its use that the well retained its freshness. If a sufficient amount of water was not drawn from the well each day, fresh water would not seep in and the well water would stagnate. Thus an open, masonry well is a community resource. If a tubewell is sunk in the neighbourhood and local women start to use it, the open masonry water would not be renewed at a sufficiently fast rate. Hence the quality of the water would diminish and everyone would be advised to use the tubewell, for it is only that water which is fresh by virtue of its being replenished. The implication here is that an open well is, perforce, a community resource; whereas a handpump can be either for private or public use.

The water table varies throughout the region. In Janakpur during the dry, hot season it is anywhere from ten to twenty-five feet below the surface; and at the time of the monsoon it rises nearly to the surface. As the water table rises in the monsoon people see the rain water seeping in through the sides of the brick-lined well. This is 'bad' water which has picked up foulness on the earth's surface and which is not fit for drinking. Out of necessity people drink it. Bad water was their explanation for diarrhoeal diseases, which they perceived to be more prevalent in the rainy, than in the dry season. Good water, however, is thought to rise from the bottom of the well. This was an illusion in that an empty well fills from the bottom, but it only fills up from water seeping through the brick-lined walls until the pressure in the well equals that in the earth. It seemed, therefore, that people did not have any idea of the value of earth as a natural filter of water. Rather it is undifferentiated water coming from within the earth that is pure. Water that seeps down from the earth's surface retains its impurities, rather than loses them by filtration.

Tests on seasonal variation of open well water were conducted in the untouchable Cobbler's neighbourhood throughout the summer and monsoon. After two days of heavy rain and overnight rain on the third day, the well water rose to ground level. Water samples were taken after the overnight rain which indicated 35,500 faecal coliforms per 100 ml. Two weeks later (and after a week without rain), the water level had fallen to four to five feet below ground level. The mean faecal coliform count on a 100 ml

sample was 1525. These figures suggest that the Cobblers were right in believing that monsoon rain increased contamination. It should be stressed, though, that contamination in the dry, pre-monsoon season also rose to similar heights, but for different reasons (e.g. a contaminated bucket being lowered into the well). The Cobblers, however, overlooked unseasonal sources of contamination and focussed only on the seasonal one.

The Corporation Water Supply: The municipal supply of water, managed by the Water and Sewage Corporation, is colloquially known as *pani tainki* water for the water is stored in a large elevated, concrete tank near the centre of town. The tank, with a capacity of 100,000 gallons, was constructed with Indian government aid and inaugurated in 1967. It is filled from two artesian wells, and disperses water throughout the town in underground mains, varying in size from 12 to 4 inches in diameter. Previously Corporation policy was to supply both public and private users, but the public service has been curtailed: public taps were often misused or broken, and consumption was uncontrolled. Consumption is now controlled by the provision of water on a twice daily basis: in the morning between 5.30 and 7.30 a.m. and in the evening between 6.0 and 8.0 p.m. For private customers consumption was further controlled in 1983 by the installation of domestic meters and quarterly charges. Some torty public taps (this figure, told me by a Corporation official, might be an overestimate) have survived, due to neighbourhood concern to prevent abuse of the facility; otherwise the service is now almost exclusively private and fee-paying. Water is piped directly to the homes of subscribers who pay Rs. 7 for the first 10,000 litres and then Rs. 1.20 for every additional 1000 litres. Most people in town do not have access to *pani tainki* water, for they are not in a position to afford the connection charge which varies with the distance of the house from the mains. This works out at Rs. 114 for the first 100 feet and Rs. 0.75 per foot thereafter. The charge does not include the cost of the pipe and labourers to dig the ditch. Those who do benefit from the facility are merchants, administrators, and professional families; or less well-off urban dwellers living in rented accommodation whose landlords have availed themselves of the facilities. The control on consumption has enabled the Corporation to extend the service; in 1984-1985, through a World Bank loan, the mains network was extended to other areas of town.

At the local level the Corporation chief is an engineer. His concerns are largely hydrological and managerial; that is to ensure that the water is delivered effectively to subscribers and that government resources are properly administered. Bleaching powder is regularly added to the water in the tank, but no tests are carried out to ensure that the water in the central tank meets WHO standards on drinking water. Nor is there any concern about the quality of water as it emerges from public and private taps. Policy decisions concerning water supply are largely taken on engineering and economic advice, not medical advice.

Water is abundant in the Janakpur region; hence the main reason for the installation of the municipal supply was not to provide water, but to

provide clean, drinking water to urban dwellers. Local people, however, are not entirely satisfied with its quality. There are three reasons for this. First, it is believed that Corporation water is stored in the tank for a day or more; hence the water is 'stale'. Second, the 'medicine' (that is, the bleaching powder) that the Corporation adds to the water is said to ruin the taste. Corporation water is not 'sweet', like handpump water. Third, Corporation water causes bodily dis-equilibrium and may become deleterious to health. In winter the night air chills the tank, cooling the water so that by morning the water is much colder than the air temperature. In summer the noon-day sun heats the tank, rendering the water tepid and thereby reinforcing the heat of the day. By contrast, tubewell water is warm in relation to the morning air of winter and cool in relation to the midday air of summer. According to the hot-cold equilibrium theory of illness, which is pervasive in the region, tubewell water complements the air temperature and thereby sustains the drinker or bather in equilibrium; Corporation water causes disequilibrium.

For the most part people thought that the advantage of Corporation water was its 'convenience' in collection. But this was not a compelling enough reason for wealthy people to use it for drinking purposes. Families which could afford the installation costs and quarterly charges were also wealthy enough to afford a private handpump in the courtyard of their home. They drew drinking water from the handpump; and used the municipal supply for personal bathing and for washing clothes and pots. The people who relied almost exclusively on Corporation water were neither the rich nor the poor, but often the salaried middle class families whose homes are in villages and who rent rooms or flats in town in which the landlord has provided access to the municipal supply. Except in the hot season -- when people crave cool water -- women cannot be bothered to collect drinking water in pots from a neighbourhood tubewell and then carry it up several flights of stairs to their flat. They use Corporation water instead.

People were generally convinced of the purity of Corporation water at source in the water tank high above the town; there was widespread belief, however, that contamination entered the system through faults in the line. Occasionally pipes burst or a connection leaked. Should the break occur underground, a damp patch became visible on the ground above the break. Should the break occur above surface, it was clearly visible in the spray. Suspicions were enhanced by the fact that for reasons of cost most pipes that connect the mains to the household run along or in the roadside drains in front of houses (the labour cost is less because a ditch need not be dug). People believe that contamination enters the domestic supply through the underground leak or from the sewage or sullage in the ditch. Due to the water pressure in the mains, it seemed unlikely that this should be so. Tests of tap water downflow from local leaks revealed either no contamination, or if contamination then no more than in houses where there was no nearby leak in the supply.

Pondwater: People prefer to bathe in the privacy of their courtyard, but families which rely upon a neighbourhood well for drinking water often prefer to bathe in ponds. This is especially the case with women, who can wash themselves more discretely by partially submerging themselves fully clothed in pond water; by contrast at neighbourhood tubewell--where they squat under the pump or pour water over themselves--they run the risk of exposing themselves in public and compromising their reputation. Additionally pilgrims and strangers to Janakpur often bathe in the ponds for religious reasons. The ponds have additional uses. Greengrocers used ponds near market stalls to scrub their root vegetables before selling them to customers. Village dairymen arrive at Janakpur in the morning carrying large tins of fresh buffalo milk on their bicycles. After selling the milk to hotel owners they rinse out the tins with pond water, before returning to their villages in the late afternoon.

Pond water is thought to go through a seasonal cycle of purity. Most of the ponds, properly called tanks, are filled by seasonal and unseasonal rain which is retained in the tank because of the clay in the soil. On average the ponds measure superficially an acre, and they are five to eight feet deep, varying with the season. In autumn and winter pond water, if safeguarded from faecal contamination, is thought to be as pure as well water. From spring an easterly wind blows with increasing intensity as the season advances. The wind not only raises considerable dust throughout the country, but it also is said to stir the water in the ponds, thereby increasing its turbidity. Certainly the wind drives the algae across the ponds. When the monsoon arrives, the ponds become impure. The reasoning lies with the excrement which has accumulated on the banks of the ponds over the past year and is now washed into the pond by the rain. It is only when the monsoon is over in September that the foulness is said to settle at the base of the pond and to mix in with the mud so that the surface water is said to become pure again.

This local explanation, based on the observation of natural phenomena, was informed by ritual convention. First, the monsoon was likened to menstruation in that both 'floods' are thought to carry away impurities, thereby leaving the earth and the womb in a state of purity. Second, important life-cycle and lineage rituals, using Brahman priests, are suspended for much of the monsoon, starting up again at the end of the season with the offering of food and water to the ancestors. It is said that only pure water can be offered to the ancestors and since Brahmans offer water to their ancestors in late August then the water must be pure.

THE DOMESTIC STORAGE OF WATER

Although women knew of at least one method which effectively purified water, still the idea of purifying water was strange, for fresh water in its natural habitat is naturally pure. Hence the aim of many women was to safeguard that purity by collecting water from an uncontaminated source in an uncontaminated manner and storing it in the

purity of their home. If, by chance, the water should become impure, or if staleness should set in, then the water is thrown away and fresh water is collected. Two kinds of water were stored for domestic purposes: tubewell water and Corporation water.

The storage of tubewell water: For the vast majority of families in Janakpur the storage of water is a necessity; the household lacks a domestic source and is thereby obliged to rely upon the neighbourhood handpump. Rather than fetch water everytime they require it (and possibly queue at the handpump during moments of peak demand) they fill their pots with water and return to their homes where the water is used until the pot is empty or the water is no longer fresh (that is the day or the night has elapsed). For a few families storage is a matter of convenience. The households may possess a handpump in their courtyard in which case they often do not bother to store water at all, preferring instead to collect it fresh at the pump upon demand. Drinking water is normally stored in clay pots. For the poor, this is a matter of necessity. Their cost is considerably less than aluminum or brass pots. But even wealthy families preferred storage in clay pots to metal ones. The reason lay in the perception that water evaporates through the clay, and as it evaporates it cools the water in the pot. By contrast, water stored in metal pots is exactly like Corporation water--excessively cold in the cool season and excessively warm in the hot season.

Tubewell water which is stored in the home (usually on the verandah) is handled as if it were drinking water, even though it may be used for other purposes. Thus hands are not allowed to come into contact with the water: either by insertion into the pot or by pouring water over one's hands from out of the mouth of the pot. Water is never drunk from the pot; rather it is poured into a glass or a cupped hand. If the pot is small and the water is primarily for personal use, it may be poured from a distance straight into the mouth. The mouth of the drinker never comes into contact with the mouth of the pot. Should a baby's bottom have to be washed, care is taken to hold the pot in the right hand and to pour the water into the cupped left hand and then to clean the child with the left hand. In brief, bodily contact with the pot is minimal. When the pot is empty, it is taken to the handpump, rinsed with fresh water and then refilled.

Tests were carried out on stored water and the results were compared with the results of tests on the particular tubewells from which the water had been collected. The indications were that contamination increased by virtue of its storage. The results varied from household to household but it was normal to expect a faecal coliform count in the pot two to five times that of the local tubewell. When informed of the faecal contamination in their stored water, the women were taken by surprise. They were ready to believe that public tubewell water at source contaminated (see above), but not water stored in the sanctity of their home.

In observing women in the home, it seemed that the one practice which could contaminate the waterpot was the manner in which the pot was lifted from the ground. Large pots, filled with water, were heavier than an armful of library books. It was not easy to lift it off the ground. One common way was to insert the right thumb into the mouth of the pot, hook the fingers over the rim and then to yank the pot off the ground until one could support it from the base with the left hand. In this way contamination could have spread to the mouth of the pot. Moments later the water, running over the mouth where the hand had been, might pick up the contamination. But even here women were cautious in that the pot would not normally be picked up with the left hand; that is, the hand with which one performs one's ablutions.

In reflecting upon the difficulty of women to accept that stored water could become contaminated, one likely explanation lay in the fact that water is not only thought to be clean; it is also in some sense thought to be pure. Support for this notion comes from the belief that water is pure in its natural state. Furthermore upon storage in the home, the water is kept in a pure place, usually on the verandah beside the raised hearth. The hearth itself is kept scrupulously clean and ritually pure, even in the poorest of households. Women purify the hearth once or twice daily by smearing it with clay or clay mixed with cowdung. When the hearth is cleaned in the morning, the stale water -- which had been stored overnight -- is replaced with fresh. The courtyard is swept both morning and evening, and at lighting up time, a lamp -- the icon of the goddess Laxmi -- is taken around and shown the house such that the hearth becomes the object of her grace. The hearth itself is worshipped on occasion; and is, on the whole, treated with some reverence. Strangers cannot approach it, and those family members who do, treat it with the same respect as a temple (e.g. by removing of one's sandals before stepping on or around it). The purity of the waterpot, and the water it contains, is further safeguarded by separating it from persons who are in a temporary or permanent state of pollution. Women in menses do not ordinarily fetch water, nor do mothers in the first forty days *postpartum*. Upon the death of a family member, earthenpots are broken. Should an untouchable touch the earthen waterpot of a high caste Hindu, the pot must be thrown away. In brief, the cleanliness of the water is bound up with the cleanliness and purity of the household. As the home is clean and pure, so is its stored water. Moreover, to state that water in the home is impure, is to allege that women are not fulfilling their household duties. Conversely any woman who diligently keeps her house clean, has great difficulty in accepting that her stored water is contaminated.

The storage of Corporation Water: Women who rely upon Corporation water are obliged to economize their time. Tasks which require considerable amounts of water, such as personal bathing and washing clothes, are carried out during those hours in early morning and evening when water is available at tap. It follows that in many homes the tap was situated in a place convenient for bathing (out of view from the verandah so that

women might bathe in seclusion) and near the latrine; rather than near the hearth on the verandah. From the tap, water is carried to the kitchen and stored there for drinking and cooking purposes. Most kitchens and verandahs were littered with buckets, basins and pots of all description to ensure that there was sufficient water during the intervals when the supply was turned off.

Women considered Corporation water to be 'stale', 'intemperate', and 'unpleasant' to taste; but they also knew that it had been decontaminated with 'medicine' and hence that it was clean. Furthermore they knew that water becomes impure through human use. What the women did not recognize was that stored water might become contaminated even prior to use. First, they overlooked the fact that by situating the tap near the latrine, they ran the risk of contaminating the tap so that the water periodically became contaminated at source. Second, they overlooked the possibility that the buckets in which they stored water might in themselves be contaminated and that this contamination might overcome the residual effect of the bleaching powder. Some women even thought that the residual effect of the 'medicine'; lasted forever, regardless of the container in which the water had been stored. Tests showed that although the Corporation water was pure at Corporation headquarters, it was, upon storage at home, contaminated. Indeed, it was often more contaminated than the water from public and private tubewells.

A few women tried to manage their household by storing water in pots according to use. Four different uses were distinguished: drinking water; water to wash or rinse uncooked food (rice, mangoes, root vegetables, etc); water for boiling rice or lentils; and water to wash or rinse utensils and plates. Each use had different implications for the way in which the water in the pots was actually handled and how (if at all) the pots were cleaned after use.

Tests were carried out in one family to ascertain the extent to which such methods of water management also safeguard the purity of drinking water. The female head of household collected water at dawn in various pots which were then tested at regular intervals throughout the day until the evening supply came on. First, drinking water was stored in a narrow-mouthed earthenpot. Water was poured from the pot, but no one touched the lip of the pot nor immersed anything in the water. The median faecal coliform count was 3/100 ml. Second, washing and rinsing water was kept in broad-mouthed clay pot, convenient for scrubbing large fruits and root vegetables. Here food was actually immersed in the water and then washed and rinsed. The water was not changed until after the noon meal had been served; hence the pot accumulated dirt and contamination. A faecal coliform count of 1176 was recorded. After use the pot is merely rinsed clean. Third, cooking water, in this case water to boil rice and lentils, was collected in the very pots in which the food was to be cooked. The mean was 236 faecal coliforms, but since this water was boiled in use, one can assume that it became pure. At the end of the meal these pots are scoured

and rinsed clean. Fourth, plates and utensils were washed from water stored in old buckets and serviceable ghee tins. Here cupped hands are dipped into the bucket to splash water across the plates and utensils. Then they are scoured with earth, using a make-shift pad of straw. The utensils are rinsed clean by splashing or pouring more water upon them. In some cases plates are immersed in the water. These pots are not usually cleaned, scoured or rinsed after use. The mean count was 799.

In analysing these results, it cannot be said that the functional differentiation of pots necessarily improves the quality of stored water, for in homes without such an organization of pots women tended to treat all water as if it were for drinking purposes. That is, the pots were kept in a special, somewhat guarded place. Nothing was allowed to come into contact with the water; rather the water was poured or splashed out. Thus functional differentiation did not mean that women treated all water more carefully; rather it meant they were able to save time by treating some water less carefully and to protect all water no more than was necessary.

INDIGENOUS METHODS OF WATER TREATMENT

Upon storage water might become foul if it is contaminated or impure if it is handled by ritually impure persons, and in any event fresh water becomes stale after the elapse of one day. Neither foul, impure or stale water can be improved such that it becomes clean, pure or fresh. One can only throw such water away until it eventually finds its way into the undifferentiated waters of the universe. The only water that can be improved is turbid water in which case clean 'dirt' is removed by filtration, using a cotton cloth. One could, of course, treat water with 'medicine' as does the Water Corporation, but such water is unsatisfactory to the taste. None of the participants in the survey were aware of the fact that sunlight and predator bacteria are major decontaminators of water. Despite the absence of a locally acceptable notion of water treatment three local practices did have bearing on water treatment: the 'lightening' of water, the decontamination of water and the cleaning of the container and the replacement of water.

The preparation of 'light' water: Naturally occurring water is said to vary in its 'heaviness' or 'thickness'. The more heavy or thick a water is, the more difficult it is to digest. Although Maithil women could not inform us what made water heavy or thick, a local ayurvedic healer explained that the cause lies with *dosa*, a term which means stain, blemish or fault. The Hindu universe is pervaded by faults which cause disorder, decay and disease. When fresh water is sealed in a bottle and then opened a week or two later, the foul smell that emanates from the bottle is the *dosa*. Women explained to us that water becomes light or thin upon heating and that light water is more readily digestible than ordinary water. If a child suffers from diarrhoea, growth problems, or thinness, it is assumed that his digestive capacity is feeble; hence 'light' water is prescribed, rather in the manner that an Englishman who

is unwell might drink a cup of weak tea or beef bouillion until he recovers his strength. Corroboration of their reasoning came in social encounters. When I explained to our hosts that I preferred boiled water to drink with my meal, they understood, not that I was healthy and wanted to prevent diarrhaeal disease, but that I was already unwell and wanted something 'light' to drink. This was also evident in their extension of the meaning 'hot'. After having brought the water to boil the positive effect of heating (its lightness) remains, even after the water has cooled. Hence women would sometimes offer me a glass of cool water, saying that it was 'hot'.

Most women did not boil water prior to mixing it with infant formula (powdered milk, barley water, or Gripe water), but if their infant was ill or thin, they were likely to bring the water to the boil in order to 'lighten' it. At hospital and at the chemists women were often told to bring the water to the boil and to keep it boiling for fifteen minutes before mixing it with oral rehydration salts or barley water or some other tonic. Women did not grasp the concept of sterility which informed medical advice; rather they understood doctors and compounders to mean that water should be lightened. In 'lightening' water, women followed the same procedure that they used to kill off the 'faults' which turn cow's or buffalo's milk rancid. That is, they brought the water to the boil and then removed it from the stove. They did not keep the water boiling for fifteen minutes. Tests of 'light' water, taken immediately after heating, indicate, however, that the heat had been sufficient to kill off all faecal coliforms.

The cleansing of an open, masonry well and the decontamination of its water: The idea of cleaning an open, masonry well implies that water is naturally pure but that the well, as a container, accumulates impurities. To cleanse a well, all its water is withdrawn and then a man is lowered down to the base of the well to fill up buckets of mud and detritus, which are then lifted out. The brick walls of the well may also be scrubbed clean. Traditionally the cleansing takes place once a year on the occasion of the Jur Sital festival on the first day of Vaisakh. In the past the festival focussed on the worship of Sitala, the goddess of pox, and her sidekick, the demon 'fever' (jwar). Thus some sort of connection must have existed between the annual cleaning of the community well and the onset of the pox season. Since most masonry wells in Janakpur have fallen into disuse, they are no longer annually cleaned and the water renewed. Only in the untouchable Cobblers' neighbourhood was an open, masonry well cleaned.

In the case of the Cobblers' well, the water was pumped from the well, the base of the well was cleaned, and twenty-four hours later the 'new' water was decontaminated with lime. From the biomedical point of view this works by raising the pH value of the water to a point where various forms of microbial life cannot sustained. Two kinds of lime are locally available in the Tarai. Rock lime is used in construction and in whitewashing. A second type of lime, called *situwa cun*, is made by pulverizing the shells of native molluscs and snails. *Situwa* lime, unlike

rock lime, is said not to irritate the skin; hence it is the preferred lime for spreading on betel leaf or mixing with chewing tobacco. It is also the preferred lime for decontamination.

Interestingly, *situwa* lime is used as a home remedy against intestinal worms. Worms, or their eggs, are thought to enter the body orally when someone intentionally eats earth, or inadvertently eats dirty food or water. Once inside the body, the worms thrive on the food in the host's stomach. If the stomach is empty, they may -- out of hunger -- gnaw at the stomach lining. The host may placate them for several hours by eating sugar. The only way of getting rid of worms, however, is to render the stomach an unpleasant environment such that the worms decide to leave of their own volition. In addition to distasteful, biomedical preparations (which are thought to be effective because of their distastefulness), one may resort to *situwa* lime. A 1:3 proportion of lime to water is prepared and one spoonful is taken before each meal. The lime acts to make the stomach bitter so that the worms are encouraged to leave. In sum, Maithil people treat both their open wells and their stomachs as if they were 'pots' and *in extremis* decontaminate them with lime. In this connection it was curious that the practice of chemical decontamination did not extend to water stored in the home in earthen pots.

As for the decontamination of water by lime, locally available Indian text books on public health recommend a 1% solution; the Cobblers, however, were too concerned by the prospect of a bitter taste in the water for them to add that much lime. Instead I estimated that a 0.6% solution was attained. The tests, conducted over a period of six days (beginning the day before decontamination), were surprising, for they revealed that faecal contamination decreased the first day after decontamination, but increased to a much higher than the normal level two days later. After a further two days the faecal coliform count gradually returned to pre-decontaminated levels. These results suggest that the addition of lime in the short-term disrupts the ecology of the well and in the long-term -- after five days -- makes no measurable improvement. It is the micro-ecology of the well, not the lime, which keeps the well water relatively clean and in this micro-ecology regular withdrawal of water (with clean buckets), coupled with sunlight and predator bacteria seem to be the key factors.

The substitution of stale with fresh water: Formerly pond water in Janakpur was changed twice annually, just before the festival of the marriage of Ram with the local goddess Sita (November-December) and the birthday of Ram (March-April). The change was seen in part as the purification of the pond water prior to these auspicious events in the town's sacred history. All the ponds were linked -- one to the other -- with a channel; and the uppermost pond was linked by a channel to the Jaladh river about one mile east of town. The dam at the lowermost pond was broken, together with all the dams in the channels connecting the ponds, so that the pond water drained from the entire system. The earthen dams were then rebuilt and fresh water was brought in by opening the channel connecting the Jaladh

river with the uppermost pond. The notion which lay behind this practice is that moving water is pure and stagnant water is foul. The moving water of the Jaladh did not purify pond water; rather it replaced pond water with pure and fresh water. Purification takes place by the substitution of one type of water by another; in the same way that fresh water in the waterpot at home is substituted every day for the stale.

For various reasons this policy is no longer practicable in Janakpur. Firstly, during a monsoon storm about twenty years ago the Jaladh shifted its course further away from town. Secondly, the rapid development of the town over the last twenty-five years and the increase in real estate values has led to the encroachment of land by some households upon the channels that connect the ponds. Thirdly, a number of residents, too wealthy to bring to heel, have directed the overflow from their outdoor privies into the channels. Were the channels to be unblocked, sewage would flow into the ponds -- creating a hazard to health. It has been more than twenty-five years since the major ponds on the east side of town were replenished with Jaladh water, and about ten years since this occurred to the ponds on the rural, west side of town.

Given the present situation, the Town Council in Janakpur has taken upon itself the duty to improve the quantity and quality of water at the two main pilgrimage ponds: Ganga Sagar and Dhanusa Sar. To this purpose an artesian well was sunk between the two ponds. Pure water streams from the artesian well standpipe down a twenty-five yard long rivulet thereby diluting the contamination in the pond and at the same time raising its level. The overflow from Ganga Sagar is conducted by pipe into Dhanusa Sar where it fills that tank to the point of overflow. The Town Council's practice was a variation of the customary idea of substituting stale, stagnant water with fresh, moving water; here the idea was to perpetually dilute the 'stale' and the 'foul' with the 'fresh'.

Within several days of bringing the system into operation, the force of the artesian water at the standpipe had eroded a basin in the clay earth large enough for five or six people to bathe, and had created a twenty-five yard long rivulet to Ganga Sagar, where people began to perform their ablutions. Tests were taken of the artesian water at source and then every five yards along its course to Ganga Sagar. No faecal coliforms were registered at source; but as the water coursed down the rivulet, it picked up faecal contamination. Just before its point of entry into Ganga Sagar, the artesian water registered approximately 25,000 faecal coliforms/100 ml; or three times the level of contamination as in the pond. Thus the artesian water did not dilute the contamination in the pond water; rather the pond water diluted the contamination from the rivulet.

But what would happen if one could revert to the past and bring in the fresh water from the Jaladh river to replace the pond water? I tested the Jaladh river at four points differentiated by their rate of flow from 'still' to 'rapid'. Tests were carried out only on one day, as the enquiry was purely of academic interest. The faecal coliform count did support

local belief (e.g. stagnant water is foul) in that contamination increased in inverse relation to the rate of flow. The two middle categories of moving water (between 'still' or 'rapid') registered faecal coliform counts which were less than the contamination in the ponds on the urban eastern side of town but more than the contamination in the ponds on the rural western side. The samples from the Jaladh river were also considerably less contaminated than the artesian well water just before its point of entry into Ganga Sagar.

KNOWLEDGE OF WATER-RELATED DISEASES

There are three main types of water-related diseases at Janakpur; diseases spread by the mosquito vectors of malaria and tropical pulmonary eosinophilia; skin diseases and worm infestations spread by washing with insalubrious water; and diarrhaeal diseases transmitted by impure drinking water. The range of local diseases related to water is, of course, more extensive than this; and the tripartite division of disease by mode of transmission is unsatisfactory in that some diseases are spread by more than one mode. The distinction has value only in that it covers endemic pathogenic agents as they are encountered in the course of everyday life in Janakpur. In this report I shall restrict myself to a consideration of the latter two types of disease, for they may be brought under some measure of control by education of individual families. Diseases spread by mosquito vectors can only be controlled by better management of the town's many ponds, ditches and rain-filled pits and this, in turn, requires the political mobilization of local neighbourhoods.

It may be helpful to preface my comments on water-related diseases with some remarks on the concept of the body, for it is the body that gives sense to the experience of illness. Maithil people see the human body to be integrated by a seven stage process, likened to an alchemical process, in which heat transmutes food into increasingly refined substances, called *dhatu*, until energy -- as the *elixir vitae* -- is produced. The process begins with the ingestion of food. Grain and water collect in the stomach where they are heated by the digestive fire and transformed into style; the style is transported to the liver where in the second stage it is heated and transmuted by heat into blood. The digestive process continues with blood being transmuted by heat into flesh, flesh into fat, fat into bone, bone into marrow and marrow into semen or uterine blood, depending upon the sex of the person. As in any alchemical action a dross is produced at each stage, starting with urine and faeces in the transformation of food into style, bodily hair, finger and toenails in the formation of bones, and so on. To complete the alchemical analogy, semen and uterine blood are thought of as an *elixir vitae*, giving physical vitality, mental energy and strength of character. Longevity, and by implication health, entail on the one hand, the refinement of food into this *elixir vitae* and on the other hand, the elimination of or counterbalancing of dross within the body. The integration of the body as a digestive system turns the body into a circulatory system of sorts in

that semen or uterine blood provides the energy to digest food in the first stage of the cycle. Without such energy coming back into the system, a vicious cycle builds up in which less and less energy is available for the digestion of food such that even less energy is produced.

Equal in importance to food as a source of energy is water. Water is thought necessary for digestion to take place; additionally it animates the body, giving suppleness to movement and freshness to the complexion. Water is not drunk in the European manner, in sips throughout the meal. Rather one eats the entire meal and then downs one or two glassfuls of water, making sure to leave some air in the stomach. The food, mixed with water, is then 'cooked' in the stomach by the digestive fire. Maithil people say, "Where there is water, there is life", and they look upon ageing as a gradual process of drying out. Women at menopause are sometimes subject to morbid feelings, for they say they are 'dried out'. In a similar vein rickets in children is referred to as *sukhaniya*, literally the 'drying out (illness)'.

The centrality of the digestive system in the Hindu concept of the body underscores the importance of dietary considerations in monitoring one's health. Moreover, it gives a rationale to certain of their actions in relation to water-related diseases. For example, many families felt that oral rehydration therapy only served to produce urine. If a child is really dehydrated it is far better to resort to intravenous rehydration therapy in which case the water flows directly into the blood, bypassing the stage in which urine is produced. As was mentioned above, some townsmen were of the view that the most serious public health problem in Janakpur was the excessive iron in the ground water which they said caused constipation. For them diarrhoeal disease was a relatively minor problem, certainly not worth the ODA's attention. They were more preoccupied by the retention of stools than any looseness in their bowels, in which case the dross was at least being evacuated from the body.

Illnesses associated with washing water: Water-washed illnesses comprised primarily skin diseases, eye and ear infections and worm infestations. Many people did not think that insalubrious water was to blame, although many believed that dirty water might exacerbate the condition. The household survey revealed that on average 40% of households had at any one time at least one family member suffering from scabies, conjunctivitis, boils, skin ulcerations, ear infections, etc.

On the whole the various sorts of skin infections were thought to have two possible internal causes. Skin eruptions were explained by heat escaping the body, causing an abscess, boil or pimple. The illness proceeds in stages, likened to the ripening of a fruit. Treatment does not eliminate the source of illness; rather it hastens the ripening process, by use of mud-packs and other means, so that the sore matures faster. As for eye and ear infections, these also could be due to internal factors, but many people were willing to attribute causality to

the foulness of some of the bathing ponds in Janakpur. Permanent skin illnesses are thought to be a symptom of *kharab* (bad, spoiled, immoral) blood and as such are inherited from one's forebears. The most serious of these diseases is 'leprosy', bearing in mind that in local terms any sort of non-reversible skin disfiguration or discoloration is referred to as leprosy. Leprosy is highly stigmatic because it indicates that one's entire family carries bad blood. In sum, water was not seen as a medium of transmission for either of these two types of skin illness, although dirty water might aggravate skin eruptions.

Worms are said to live in dirt or to infest fresh fruit, vegetables and meat. Hence intestinal worms come from eating dirty food or turbid drinking water. Alternatively they come from eating uncooked fruit, vegetables or meat which is already worm-infested. Worms were, on the whole, a banal illness which many people put up with until they were severely inconvenienced. Pain in the stomach or bowels may be attributed to worms who, in their own hunger, gnaw on the gastro-intestinal lining. Treatment entails either eating sugar which mollifies the worms and wins temporary relief from pain. Alternatively one can get rid of the worms by eating food which is unpleasant to the taste: e.g. chili peppers for heat, underripe mangoes for acidity; lime paste for bitterness. The worms find the food similarly unpleasant and seek exit from the body, either from nose or mouth or from the anus.

Illnesses associated with drinking water: Given the centrality of the digestive process in integrating the body as a system and providing bodily energy, it was expected that people monitor their health in diagnosing the state of their bowels. Normal faecal matter, when observed on the ground, should contain no evidence of blood or mucus; its colour should be brown; its smell should not be too strong; and its form either 'tight' (meaning having its own form, e.g. shape of sweet potato) or 'tied' (meaning that it emerges in one long strand which heaps on the ground like a length of rope). In addition to normal faecal matter, there certain developmental stages when diarrhoea itself is treated as normal (e.g. neonate not yet used to mother's milk or infant whose teeth are emerging); and certain dietary regimes when diarrhoea is to be expected (e.g. after eating a spicy, 'hot' meal).

More important than the form of the stool, as a sign of normalcy, was the number of bowel movements per day. Normally one should pass stools once a day, in early morning. For the pious there should be two bowel movements per day, at first light and in mid-afternoon prior to morning and evening services at the temple. To pass stools more than twice a day becomes an inconvenience, especially if the desire to defecate comes quickly. To pass stools less than once a day gives rise to concern and morbid feelings. Many people were more concerned about constipation than about diarrhoea. Diarrhoeal disease was inconvenient and annoying, but something that one puts up with, rather like back-ache in England which may be a medical complaint for the middle-class, but is

something 'normal' or 'part of life' for the working class. Indeed at any time in the course of the household survey 60% of the families had at least one member suffering from some diarrhoeal disease. Thus, diarrhoea was 'normal', especially so for the poor who registered a disproportionate share of the cases.

Given the inconvenience or the normalcy of diarrhoea then the question becomes at what stage does diarrhoea become an illness for which medical treatment is sought. Chronic diarrhoea indicates a digestive disorder, such as the stomach under-cooking its food. This may also be confirmed in thinness which is a sign of an inadequate or weak digestion. Persistent diarrhoea in children, coupled with thinness, might lead mothers to give medicine that increases the child's appetite. It may also induce her to massage the child several times a day, using mustard oil, for it is thought that the oil is absorbed by the skin and fattens the tissue.

Sudden diarrhoea was worrying for some people, especially parents of their children, yet it was largely thought to be a self-inflicted illness, brought about by under-digestion because the food was too heavy, too hot or too much to digest. Alternatively too little or too much water as drunk. As a self-inflicted illness, diarrhoea is often a self-healing one as well. These comments do not controvert the fact that 'dirty' food and water may cause diarrhoea, but here the dirt is thought to upset or tax the digestive system. Despite reports that people sometimes cut off fluids until diarrhoea is over, little evidence of this was found in Janakpur, and the remedy was suggested only by adults for adults. All testimony from parents indicated that children would still be given fluids. This was especially the case for breastfeeding mothers (which covers most infants up until 2 or 3 years of age). Feeding a child is so much part of parental control of children that it is unlikely a mother would cease to breastfeed simply because her child had an acute case of diarrhoea. Nearly all mothers in the survey reported that they would also use ORT (marketed in Nepal as Jivan Jal -- the 'water of life'). Nevertheless in one year in the field it was never seen in actual use. Because my research was seen to be part of the government and because Jivan Jal is identified with the state (both the national pharmaceutical corporation that manufactures it and Radio Nepal that advertise it), I suspect that local people thought they might please me by reporting that they would be ready to use it.

Sudden diarrhoea was not in itself cause for alarm, but acute diarrhoea with blood and mucus in the stool was cause for worry, and acute diarrhoea with vomiting cause for alarm. Vomiting was particularly anxious for mothers, for they are concerned to nourish their child. If their child cannot accept their nourishment then they almost invariably seek professional help from a medical doctor (allopathic or homeopathic), 'rustic' doctor or Vaidya. Such illnesses are known simply as mumh-pet, literally 'mouth and stomach', or by the word *haija*, conventionally translated as cholera yet locally used in a loose sense to refer to any acute

case of diarrhoea with vomiting. In the case of cholera health is seen to deteriorate quickly: the blood thickens, the limbs become cold, the pulse weakens and disappears, the skins become loose, the eyes become deep set, the lips turn blue, urination stops and within three days the person dies. Epidemic cholera was in the past attributed to an angry, itinerant goddess whose name is, literally, 'Death' (*marki*).

In sum, diarrhoea was, for the most part, an inconvenience, which in itself evoked few morbid feelings in the sufferer. Concern took root only when persistent diarrhoea was coupled with mucus or blood in the stool or, in the case of infants, with a perceived deficiency in growth. In either case one might modify the diet, opting for 'light', readily digestible foods and water. One might also seek treatment in the form of medicines to stop the bleeding (e.g. antibiotics for dysentery) or to enhance the powers of digestion (e.g. digestive enzymes and tonics for children). Acute diarrhoea with vomiting was a cause for immediate concern. Treatment focussed first on the cessation of vomiting then the elimination of the cause of diarrhoea.

THE ADEQUACY OF LOCAL KNOWLEDGE OF HYGIENE

It may be helpful to begin this assessment of the adequacy of cultural knowledge in health development by elucidating the ambiguous notion of culture found in the development literature. For some planners culture is a factor which influences people's decisions about possible courses of action. This sense of culture implies that a people, like health planners themselves, are pragmatists who rationally calculate their self-interest. Should a Maithil woman act in such a way as to make little sense to the health worker's calculation of her self-interest, the worker may see the presence of some cultural factor. Culture does not appear here as the totality of her experience, rather it is one factor among several (e.g. education, religion, sex) which influences her decisions about water storage and management. Here the health planner sees himself as a scientist, or as a purely rational administrator, whose own cultural background (be it Nepalese or European) does not impinge on his own professional decision-making. It is other people, lacking professional knowledge, who are influenced by 'cultural factors'.

There is, however, a second sense of the term culture. This sense implies that culture is a complex of intersecting codes by which people understand the totality of their experience. Here culture specifies the differences between peoples, bridged by the meta-understanding of the translator. Everyone has a culture, both native and health worker; the problem of planners is to translate their concerns into the understanding of local people. Policies succeed or fail depending upon a people's understanding of the programme. According to this second sense of term there is no way that policies can be successfully implemented and taken up by a people without acquiring some positive meaning in terms of their local culture.

It is this second sense of culture which informs much of the current research in development anthropology, yet the fieldwork carried out in Janakpur suggests that this sense of culture is in some respects oversimplistic. Although the expression 'cultural knowledge' serves as a convenient shorthand, it should be borne in mind that this knowledge is often unevenly distributed across a culture and it is not necessarily formulaic. Instead, it is structured by practices within family traditions. The functional differentiation of pots, the use of lime as a home cure for worms, and other such practices were part of a lore passed down through families. Some of these practices (e.g. child care, cooking, domestic rituals) were perpetuated in the patriline (even though only known to the women of the family) such that upon marriage the bride would be expected to learn the procedures of her husband's home. Other practices (e.g. home cures) might come from one's own natal family. Since marriage is village exogamous this means that Maithil practices are distributed throughout the country, but that there is considerable inter-family variation.

Of these practices some may constitute a formulaic knowledge which a particular person possesses. For example, a woman may acquire a local reputation for her knowledge of medicines, and her neighbours may come to her for advice or treatment. This knowledge is in some respects personal. She would not charge anything for her time or help, but if she were to offer, say, a home cure, she might prepare it herself rather than give away the recipe.

Other forms of knowledge are common, or at least not exclusive, and they may be exchanged for pragmatic purposes between neighbours. In this vein Maithil women told me (or showed me) the virtue of 'light' water, the benefit of massage with mustard oil for dehydration, the use of *situwa* lime in deworming, and so on; and when I asked them about such things, they assumed that I had worms or a weak stomach. Everyone had his or her own ideas about the benefits and rationale of their practices. Moreover, they were interested in what 'the people of my country' did in the treatment of water-related diseases, and they discussed and evaluated my own stock of recipes and stories. In some cases they took readily to my ideas, but they treated them as only one possible interpretation or remedy out of many. In other words, they took my ideas as ideas.

Common knowledge lacks the formality of formulaic knowledge which can be personally possessed; and insofar as it informs decisions then the knowledge itself is locally constructed and subject to the same constraints as the decisions which are locally negotiated. To revert to the 'knowledge' of decontaminating an open, masonry well, the Cobblers were clearly concerned by the prospect that the lime would turn the water bitter. All agreed that lime had to be used, but one man 'knew' that unrefined sugar would have to be added to remove the bitter taste. Other men had different ideas about the strength of the lime solution. The final outcome, a 0.6% solution, was negotiated by the participants and reflects the persuasiveness and authority with which particular members of the community advocated their solution to the problem. One might, therefore, learn the terms of the debate or the criteria by which something is evaluated,

but one cannot formalize common knowledge for it is context bound: not merely by the purpose of the action (e.g. to decontaminate well water) but also by the persons present who are negotiating the solution.

Other hygiene and sanitation practices were not, however, ideas in that they were not objects of reflection; rather one might speak of habitual practices of which the actors were not necessarily aware. Here one might include such practices as women who pour drinking water across the mouth of the pot where, moments earlier, their fingers had been. Or one might mention women who were instructed by doctors to boil water for fifteen minutes prior to mixing it with infant formula, but who, witlessly, merely brought the water to the boil, as they bring buffalo's milk to the boil, to prevent it from going rancid. Here also one might mention habitual practices of which women were quite aware, such as how to keep their house ritually pure, but which made it difficult for them to accept that the water stored in earthen pots by the hearth is 'dirty'. In such cases to tell women that their water is contaminated, is registered by them as a moral accusation, not a bacteriological observation.

CONCLUSION

In reviewing cultural knowledge of the quality of water, the evidence suggests that local beliefs and practices were, in the main, bio-medically adaptive. One might refer here to such notions as: water as a medium of contagion, the influence of surface contamination on ground water, the insalubrious nature of public wells and ponds (when contrasted with private ones), the throwing out of 'stale' water, the virtues of 'light' water for infants with digestive problems, the importance of water being regularly drawn from the well for the well water to remain fresh, the use of lime in decontamination, and so on. These local ideas and practices are powerful tools for health workers who might use them in health education or for mobilizing people for public health purposes. Such ideas make sense to local people for they are part of their culture; and by expressing public health measures and goals in such terms one restores dignity and autonomy to local people in their effort to improve their neighbourhoods.

But this leaves unanswered the problem of how health workers might introduce non-local hygiene and sanitation practices among a people where folk competence seems maladaptive. The present research, set in the context of Maithili culture, suggests that folk competence in hygiene and sanitation is based on common knowledge and habitual practices, rather than on formulaic knowledge. It seems unlikely that folk knowledge will be made 'more competent' merely by substituting it for bio-medical knowledge. In the case of common knowledge, people will take bio-medical advice as an idea which they will discuss and possibly adopt or possibly reject. The health worker's admonitions merely add to a pre-existent local interpretive activity. As for habitual practices upon which people themselves may not have reflected, the health worker's instructions about how to act 'properly' may have no effect -- not because the person 'thinks'

he is 'already acting 'properly' but rather because that person may not be aware of certain aspects of the action. In such cases, the starting point for community health workers cannot be the substitution of one item of knowledge for another; but rather the objectification of a person's practices. By enabling someone to become aware of what he is doing, his actions may come to lose their habitual nature. Rather than tell people what they *should* do, better to tell them what they are doing, and let this dialogue form the basis of the local health worker's relationship with the people.

Ultimately what became central in this investigation was not so much a people's local knowledge, but the culture of their practices and the local interpretive activity which is both conventional and creative, and hence also experimental in its application. These practices possessed a rationale which was reinforced by other practices, such that a practice made sense in many more ways than the specific purpose for which it was intended (e.g. keeping domestically stored water pure was inseparable from keeping the house clean, from the morality of the wife being seen to keep the house clean, etc). If one may speak of 'barriers' in understanding then it is practical behaviour, not language, that constitutes the barrier. To return to the example mentioned above, Maithili-speaking medical doctors in Janakpur explained in Maithili to Maithili-speaking women the importance of boiling water for fifteen minutes in order to make the water pure. There is no concept for sterile water in Maithili and Maithili women understood the doctors to be referring to 'light' water. They went home and prepared 'light' water by bringing water to the boil and then removing it from the flame. This was the same procedure that they used to prevent buffalo's or cow's milk from going rancid. In short, cultural misunderstandings occur, despite the fact that everyone speaks the same language. Hence language was not central to misunderstanding, practices were.

In reviewing all the observed hygienic practices, there are two potential areas for dialogue between local people and health workers, both of which concern the storage of drinking water. First, some educated, middle class women thought that municipal water, by virtue of its having been treated, was powerfully pure and that it retained its purity regardless of how it was stored. Second, nearly all women -- both educated and uneducated -- found it difficult to believe that the water they store in their homes is liable to faecal contamination. This latter problem would seem to be particularly intractable, not only because it violates Maithil common sense but also because it would be subject to moral interpretation, calling into question the dutifulness of the housewife.

This does not mean that in all other respects drinking and bathing water in Janakpur was up to standard; it does mean, though, that in those instances where it was not up to standard people knew that the quality was deficient. Hence the deficiency cannot be attributed to ignorance,

but rather to the inability of local people to organize themselves for appropriate action. Moreover, this does not mean that decisions based on common knowledge were wisely taken. The Town Council's decision to dilute pond water with fresh, clean water from an artesian well was unwise in that bathers contaminated the well water even before it entered the pond. But such unwise decisions cannot be attributed to folk knowledge any more than can the decisions of development experts who, in some cases, may be better informed but equally fallible.

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Webs of Dependence in Rural Nepal: Debt, Poverty and Depopulation in the Far Northwest

Nancy E. Levine

Serious indebtedness among Nepal's rural peasantry has been identified and has been the focus of periodic reforms since the time of King Prithvi Narayan Shah. Despite this, indebtedness remains a pervasive and unresolved problem throughout the country. Chronic debt is aggravated by exorbitant rates of interest and consumes limited household budgets, already strained by low and often declining productivity in traditional agriculture. Thus debt may remain one of the fundamental economic problems in remote hill districts of Nepal today (Regmi 1972:98).

Notwithstanding the compelling social and economic repercussions of debt, the subject has been relatively neglected in published descriptions of rural Nepalese economy and society. There are some notable exceptions: Regmi's monumental *Land Tenure and Taxation in Nepal*, particularly Vol. III (1965), L. Caplan's *Land and Social Change in East Nepal* (1970), and A.P. Caplan's *Priests and Cobblers* (1972). The latter two are anthropological works which focus on particular regional systems and examine how social relations have been shaped by chronic debt. As they show, indebtedness supports dependency and exploitative relationships and widens existing cleavages between groups, generating social divisiveness. Implicated in this picture is a conflict model of class and caste relationships in Nepal -- one which has been highly influential in accounts of Nepalese social dynamics. Another common assumption about debt in Nepal is that its sources lie in shortages of cash--cash for regular expenditures, such as purchases of consumer goods and tax payments, and for extraordinary expenses such as weddings and funerals (A.P. Caplan 1972:1; L. Caplan 1970: 5, 97; Macfarlane 1976: 199; Poffenberger 1980: 53).¹

The Nepal Rastra Bank's recent nationwide survey offers a more abstract and quantitative perspective on patterns of agricultural credit. The survey shows debt, and traditional systems of borrowing in particular, to be widespread throughout the country and to have been moderated by the introduction of government-sponsored credit agencies. The limitations of the survey lie in its focus on relatively favored regions--those accessible by road transport--and in its exclusive focus on economic issues (Nepal 1980). There was no attention given to social systematics: how debt influences social relations, supports economic inequities, and orders social relations in local village communities. These are the issues explored here.

This paper derives from a study of indebtedness in six villages of Humla District, and some of its findings may counter existing presumptions about debt in traditional rural villages of Nepal. First, debtors and creditors in Humla neither stand ranged across any pre-existing social or ethnic divides, nor do they necessarily come from opposed social groups. Major loans are contracted between persons of the same caste or ethnic group, between have and have-not of any status, and loans play a major part in the village dynamic of changing economic advantage. Second, indebtedness is grounded at another economic level than the monetary economy and is more deeply rooted than modern needs for cash. Instead, the ultimate sources of debt lie in shortages of arable land, while the proximate sources lie in shortages of grain. This suggests that the problem may worsen in future, due to growing shortages of land and increasing inequities in its distribution. Such changes may further widen the gulf between rich and poor--and do so regardless of their ethnic or caste identities.²

It should not be surprising to find indebtedness widespread in Humla District, which is chronically grain-short and one of the poorest regions in the nation. Few households escape entanglement in local webs of debt, the traditions surrounding borrowing and lending are deeply entrenched, and interest rates are extremely high, particularly for loans in kind. In Humla, debts link not only members of different castes and ethnic groups, but also kin, affines, friends, and neighbors. Because interest rates are so high, loans bring extraordinary profits to the small number of creditors. At the same time, the costs of indebtedness erode the earnings of the poorer majority and cut deeply into their meagre reserves of food. When debtors find themselves unable to keep up with their payments, they must renew their loans or take new loans, and the unpaid interest of the old debts is added to the new. For the poorest, the vicious cycle of debt may lead first to temporary mortgaging and then progress to permanent alienation of farmland. Members of households which have lost their lands have two choices: either leave the region or become bond servants, who slowly work off the debts on their former property. As the paper makes clear, this system of debt is not new, although it may have expanded to enmesh more households--and more deeply--in recent years, nor is it easily reformed, as failed attempts at reform show. It has historical and cultural supports and it is grounded in conditions of scarcity, inequities in landholdings, unstable trading arrangements, and general economic insecurity.

THE HISTORICAL AND LEGAL CONTEXTS OF DEBT IN NEPAL

The government of Nepal has made periodic efforts to moderate peasant indebtedness since the time the country was unified. Much of this involved legislation to reduce customary interest rates. Early regulations stipulated rates no higher than 10 percent in cash and 25 percent in kind, although they were poorly enforced. In 1935, regulations limited interest on loans of all kinds to 10 percent up to the doubling of

the principal; this standard was reiterated in the Land Reform Act of 1964. Despite such reforms, interest rates in the western hills generally have remained at high levels, up to 25 percent in cash and 50 percent in kind (Gaborieau 1981:144; Regmi 1972:98-99; see also Nepal 1980:174). The situation has not been altered by improved communications and the expanded government presence in remote areas. What has been effective is government development programs in more accessible areas, which have undermined the monopoly of traditional moneylenders and have provided opportunities for low-interest borrowing for long-term agricultural improvements and immediate consumption needs (Nepal 1982:8-13). However, such projects have barely touched the poorer, more remote hill and mountain districts.

Thus at the time of this study, interest rates in Humla had not moved from their historically high levels. Gaborieau has suggested that part of the reason is cultural: that the resistance to moderating interest rates is embedded in Hindu traditions and that despite increasing protection for debtors in the legal system, Nepalese law still bends heavily in favor of the creditor (Gaborieau 1981: 134, 140).

ANTHROPOLOGICAL TREATMENTS OF DEBT: CONFLICT MODELS

The major anthropological studies of debt in Nepal have focused on its local contexts and have explored how indebtedness is supported by and sustains economic inequities and social cleavages between diverse ethnic groups and castes. Here lies a major contrast with the situation in Humla, where debt knows no caste or ethnic distinctions. Because the prevailing model of debt in Nepal--as harnessed to ethnic conflict and caste divisions--has been so influential and because of its ill-fit to Humla realities, it merits closer scrutiny.

The paradigmatic work in this tradition is L. Caplan's *Land and Social Change in East Nepal*. Caplan views the problem of debt as situated within other social processes and describes it as part of an evolving dynamic of cultural contact and ethnic conflict between opposed social groups. The groups concerned are the Tibeto-Burman speaking Limbu, who are the earlier inhabitants of the eastern hills, and high caste Hindus, who recently immigrated there. Caplan compares this situation to long-term struggles over land between Hindus and tribal peoples in India (1970:2-3).

As Caplan's Limbu informants reconstruct their history, they had more land than they could cultivate when the influx of Brahman immigration began. The availability of land, need for labor, their headmen's attempts to expand their followings, and government policies all served to encourage immigrant settlement.³ In later years, government involvement in the area grew, and Brahmans took advantage of their literacy, numbers, and high caste status to improve their political and economical position. Their strategies included acquiring land by purchase and profiting from moneylending and various sharp practices. They also were

aided by government efforts to reduce the amount of land which Limbus held under a traditional, communal form of land tenure known as *kipat*. Limbus lost their lands, which meant inadequate food production for many, and made them even more dependent on Brahman creditors. The problem was exacerbated by the practice of usufructuary mortgages, which gave Brahman creditors cultivation rights over the parcels of land Limbus used as security for the duration of their loans. Thus loss of *kipat* and the mortgaging of land contributed to a vicious cycle which carried Limbu further into debt and into increasingly difficult economic circumstances (Caplan 1970: 5, 56-64).

No doubt ethnic differentiation between Brahman and Limbu is marked and, equally, frictions between these groups have intensified with the conflicts over land (Regmi 1976: 102). The picture presented above, however, must be qualified. First, Limbu dependency and Brahman advantage have been but one phase in a long history of inter-group interactions. Before the turn of the century, Brahmans were subordinates in a hierarchy based on land grants and were dependent on Limbu headmen for rights over agricultural land. Their subordination was reinforced by the political hierarchy and expressed in annual payments of tribute and labor service to the headmen (Caplan 1970:125-26). Only later did advantage fall to the Brahmans. Today the balance of power remains in flux. Limbus, like certain other Tibeto-Burman speaking Nepalese groups, have been recruited to Gurkha regiments. Those men who serve in foreign armies secure high wages and pensions which can be used to pay off their mortgages, reclaim their lands, and even purchase additional land or take over the mortgages of others. The result is that a small group of Limbu have acquired power and wealth within the community.

Second, a closer examination of actual creditor-debtor relations suggests that the situation is more complex. We find that in the cluster of villages which Caplan studied, Brahmans held mortgaged land roughly in proportion to their representation in the population. Together with Brahmans from outside the cluster, they held approximately half the mortgages incurred by Limbus. At the same time, members of other groups, including Rai and even Hindu untouchables, held 22.6 percent of the mortgages, while fellow Limbus held 27.6 percent of the mortgages (Caplan 1970: 96, 97, 100). Not only that, two wealthy Limbu households in the cluster had mortgages from twenty-two (or twenty-six percent) of the local *kipat* owning households, employed ten Limbu tenant households on their lands, had made loans in cash to another seven households, and had hired agricultural laborers from virtually every household in the village and domestic labor from two (Caplan 1970:33, 173).⁴ We also find that the largest mortgage holder within the cluster was a Limbu and the largest mortgage holder outside of it was a Gurung (Caplan 1970:100-1). Thus, if Brahmans were the dominant creditors at the time of the study, it is not only a matter of relative wealth, but of relative numbers locally.⁵

A.P. Caplan's *Priests and Cobblers* offers another illustration of indebtedness linked to divisions of caste and harnessed to changing political relationships. This study takes as its focus the western midlands, in an area where Brahmans are the more recent immigrants and have acquired dominance over the earlier settling occupational castes, predominantly Sarkis. Brahmans gained the advantage here simply through exercising their traditional occupation as priests, for which they were paid in cash and grain. They used this income to buy land and to lend money at high rates of interest, securing their loans with usufructuary mortgages or contracts for labor service, sometimes of indefinite duration. The balance of power changed when the government expanded services and thus job opportunities in the nearby district capital and when cheaper grain became available from a newly reclaimed rice-growing area to the south (Caplan 1972:1-2, 33, 36).

SIX COMMUNITIES IN HUMLA: SETTINGS AND SOURCES OF DATA

Humla is a district in the far northwest of Nepal with the second largest area and the third lowest population density in the country, at 3.6 persons per square kilometer (Nepal 1984:13). The low population density can be traced to the low ratio of arable land and to its low productivity, which in turn can be traced to the region's steep terrain, low rainfall, and limited water sources. Adding to these problems, Humla is long-settled, and its small population long ago outgrew available farmland. Thus we find the lowest per capita grain production and the most severe grain shortage in Nepal.⁶ The limited resource base at home has prompted various economic strategies for securing income abroad. One strategy with a long-documented history is the salt-grain trade, which involves transporting rock salt mined in Tibet to the middle hills, where it is exchanged for surplus grain. Another, possibly recent, adaptation is seasonal labor migration to more favored hill regions in western Nepal and in India, primarily Pittoragarh, Darchula, and Garhwal or, occasionally, other hill districts farther afield.⁷

The population of Humla includes Hindus, most of them high caste, small communities of Tibetan speakers, and a group known as Bura, or Byansi, who cite Darchula Byansi, high caste Hindu, and Tibetan ancestry, but who are heavily Nepalicized today (see Levine 1987). There are major sociocultural differences between these groups and associated differences in economic adaptations. The Tibetan speaking populations, here termed "ethnic Tibetans" as a convenient shorthand, tend to occupy the higher mountain valleys where the growing season is short but pastureland is readily accessible. They also tend to engage substantially in the salt-grain trade. Individual households are able to support such diversification through the practice of fraternally polyandrous marriage. The different co-husbands tend to specialize in different economic sectors, and households can take advantage of multiple sources of income to offset periodic reverses in any particular sector. By contrast, Bura are predominantly agriculturalists and today hold the most favored sites in the

region. Most villages are found at middle altitudes and on forested northern slopes, which offer the greatest opportunities for agricultural expansion. Brahman, Thakuri, and Chetri villages tend to be found in valley bottoms, where irrigated rice agriculture is possible. Such a location may be highly valued, but the advantages are mixed today. First, the narrow strips of rice land meet the needs of only a fraction of village households, and second, the growing populations of other ethnic groups constrain opportunities for expansion. This is because land higher up the mountain slopes has been put under cultivation by ethnic Tibetan and Bura, so that land expansion only can be achieved at the cost of displacing them. Thus the high caste Hindus, despite their political and economic dominance in the past, are among the poorest people in Humla today. Within their villages also live a scattering of occupational castes: Kami, Damai and Sarki, who hold very little land and tend to be extremely poor. A final factor to consider is the effects of participation in trade. Trade in this part of Nepal has been extremely volatile: thus the economic fortunes of Tibetan villages can change rapidly, following fluctuations in prices or the availability of commodities at any node of the regional trading system. For Bura and caste Hindus, community wealth has depended almost entirely on agriculture.

The following account of systems of credit and debt in Humla was collected in the course of a larger study focusing on changing economic conditions and their impact on household decision making and fertility. Seven village communities were included in the study: three were ethnic Tibetan, two were Bura, and two were high caste Hindu, predominantly Chetri in caste.⁸ The selection of villages was guided by the study design, which was based on a controlled comparison; differences in ethnic identity, household and marital system, and economic circumstances formed the poles of the comparison. Two of the communities had substantial landholdings (by Humla standards) and relied primarily on lands long ago put into production, three communities were engaged in major land reclamations or other expansions of economic opportunities, and two communities faced irremediable land shortages. Unsurprisingly, the incidence of debt was highest in the latter communities.

Although I had carried out research in Humla previously, I had studied a particularly wealthy community and had little knowledge of the severity of agricultural indebtedness. For this reason, I initially designed an ethnographic survey and questionnaire without including any items on debt.⁹ When its importance became apparent, I incorporated questions on debt--in time for all but the first community study. Informant reticence also contributed to my delayed awareness, for loans, particularly in kind, are a sensitive subject for creditor and debtor alike. The heavily indebted, perhaps not surprisingly, proved more willing to discuss the subject and less reluctant to describe the costs of their loans than major creditors were to reveal the extent of their profits. Debtors tended toward discussions of interest rates, the actual costs of borrowing, and subjective costs of

economic dependency, while creditors were likeliest to discuss the very real insecurities in their position. Collecting numerical data on individual debts in-kind posed special problems as well. Households take out small loans as the need arises: each loan is assessed in the specific types of grain borrowed, and each has its own repayment schedule, often tailored to the unique requirements of debtor and creditor. Debts, moreover, tend to be contracted with different creditors at different points in time. Recording the full information proved very time-consuming and required a special worksheet. Such complex recitations also tried people's patience; many chose instead to summarize their debts, citing the number of measures of wheat, buckwheat, and so on that they had paid out (or been paid) during the preceding year and the number of measures of each grain they still owed (or were owed). It is difficult to assess how often people gave incomplete or misleading information. Some debtors may have exaggerated their payments out of a sense of grievance, others may have hidden loans out of embarrassment, and certain creditors, concerned about the illegality of the high interest rates they charge, may have deliberately concealed their lending activities. Because of the likelihood of deceptions, the data presented here should not be regarded as an exact account of the state of indebtedness in Humla at the time of the research. It should, however, suggest the scope of the problem and provide a point of comparison with other areas in the hills of Nepal.

The villages discussed here have been given the pseudonyms Gyaling, Rongphug, Daiba, Sankhagaon, Jajarkot, and Kharkot. The first two are ethnic Tibetan, the second two are Bura, and the last two are predominantly Chettri with a few service caste households (see Table 1). Gyaling (ethnic Tibetan) and Sankhagaon (Bura) are located in northern valleys and have carried out major expansions of agricultural land over the past few decades. Rongphug (ethnic Tibetan) and Jajarkot (Chettri) are located in narrow river valleys and face severe shortages of arable land. Daiba (Bura), which is located farther south, has excellent land: both irrigated rice lands and unirrigated uplands. Kharkot (Chettri) is situated near the district capital and has benefitted from the recent expansion of government services there. The availability of government employment and employees' access to subsidize grain has completely altered patterns of indebtedness in this community, as I shall show at the end of the paper.

Ethnic Identity, I have said, is associated with different ways of making a living. Ethnic Tibetan communities tend to engage in substantial trade. Although Bura and high caste Hindu villagers also visit the trade marts in Tibet, most households send only one man, and he usually goes once a year, carrying small trade items, spices, fruits, and the like, on his back to exchange for, perhaps, a basket of salt and a few Chinese goods. This differs markedly from the trade of ethnic Tibetans. Many of the latter keep large herds of pack animals and have one or more members travelling and trading between Tibet and the Indian border year-round. Full time trading can yield enormous profits in grain and salt,

Table 1
Contrasts Between Study Communities

Community Name	Ethnic Identity	Approximate Population	Sources of Income	Average Landholdings ^a
Gyaling	Tibetan	650	Agriculture, Herding, Trade	9.7
Rongphug	Tibetan	350	Agriculture, Casual Labor, Trade	4.5
Daiba	Bura	500	Agriculture	8.0
Sankhagaon	Bura	600	Agriculture	7.9
Jajarkot	Chetri	1,100	Agriculture, Casual Labor	4.7
Kharkot	Chetri	1,100	Agriculture, Government Service	5.8

- a. The measure of landholdings here is "plow days", the number of days a household requires to plow all its fields with a team of *dzo*, a yak/common cow crossbreed. Each plow day is equivalent to approximately thirty percent of an acre.

as well as in goods manufactured in China and India. In a bad agricultural year such as 1982, the income from trade can exceed the value of grain production in major trading villages like Gyaling (Table 2). In the past, Rongphug earned substantial profits from its special rights over a trade mart located north of the village. Bura and high and low caste Hindus from southern Humla would travel there in order to exchange their surplus grain for salt, wool, and meat. Rongphug villagers facilitated exchanges between the Nepali speakers and Tibetan nomadic herdsmen who travelled south to the mart. For their work as middlemen and translators Rongphug villagers received 5 percent of the grain and 20 percent of the salt exchanged. In the 1960's, this trade mart closed, and villagers lost one of their major sources of income. Their response was to seek casual labor with wealthier neighbors and seasonal labor migration farther afield. In 1982, trade was permitted to resume at the old mart, giving villagers a chance of improving their economic circumstances again.

Although a few Bura and high caste Hindu households also keep pack animals and follow trading circuits similar to those of Tibetans, they find themselves disadvantaged in trade (Furer-Haimendorf 1975: 261, 276). One problem is their inability to speak Tibetan and therefore to negotiate

effectively at one of the most important trading sites. A second is the scarcity of household labor available for full-time salt trading. In the four Bura and Chetri villages of Daiba, Sankhagaon, Jajarkot, and Kharkot, households included 5.4 members on average. By contrast, the ethnic Tibetan villages of Rongphug and Gyaling have an average of 7.0 members per household. This is why those few high caste Hindus and Buras who engage in full-scale trading are usually from joint family households. Due to their more extensive landholdings, many Bura are able to work primarily in agriculture, while members of the land-short Chetri communities supplement the proceeds of their farms with casual labor or government service (Table 2). The latter is preferred, because of its status and better pay, but is less accessible to villages distant from the district capital.

Table 2
Combined Household Income, 1982-83

Community Name	Ethnic Identity	Mean Household Income ^a			
		Income from Agriculture	Income from Trade	Income from Wages ^b	Combined Income ^c
Gyaling	Tibetan	8,613	11,616	422	20,651
Daiba	Bura	11,253	472	722	12,447
Sankhagaon	Bura	9,739	1,300	559	11,598
Jajarkot	Chetri	6,586	2,836	1,811	11,233
Rongphug	Tibetan	5,428	4,133	1,279	10,840

- This describes economic activities during the twelve months preceding each village survey. Agricultural production was low in all communities during this period.
- This includes profits from trade in sheep, wool, manufactured items, salt, and grain.
- This includes government employment paid in cash and casual labor paid in kind.

Before I turn to the discussion of indebtedness, a few supplementary notes on these villages' economic circumstances are in order. First, Rongphug's present-day poverty can be traced to a combination of misfortunes. In addition to their lost income from trade, the village is located in a narrow valley where there is little high-quality land. The result is less agricultural income and less income overall than any other village (Tables 1 and 2). Second, as comparisons of Gyaling, Daiba, and Sankhagaon show, there is more to grain production than the amount of land held. The average Gyaling household owns twenty percent more land (measured in days of plowing) than Daiba, but produces considerably less grain and also produces somewhat less grain than Sankhagaon.¹⁰ This is because Gyaling cultivates at higher altitudes and because much of its land is new--reclaimed from forest during the preceding two decades. After a first flush of productivity, yields slowly declined, due in part

to poor cultivation practices. Daiba, by contrast, has long-cultivated, well-maintained fields which are highly productive, and this is why villagers have so little recourse to wage labor and trade. Reliance on agriculture alone may be rare, but it is the ideal throughout Humla, even for ethnic Tibetans intensively engaged in trade. Finally I should add that figures on combined income exclude animal husbandry, both dairy products and profits from animal sales. With the exception of Gyaling, cattle herding is extremely small-scale, and such income is minimal. Thus we find that prosperity has no ethnic caste in Humla. The two ethnic Tibetan villages stand at opposite ends of the spectrum, with the other communities in between. The situation is similar for debt.

SYSTEMS OF DEBT

In Humla, webs of indebtedness cross-cut caste and ethnic distinctions. Households with surpluses of grain or cash extend credit to caste superiors and inferiors, members of the same and different ethnic groups, and people within and outside the village. Thus the logic of debt must be sought elsewhere. When one examines the factors which enter into individual creditors' decisions to extend loans one finds an array of (sometimes competing) practical and social considerations. Among these are concerns as simple as credit-worthiness--people with surplus grain prefer not lending to those unlikely to repay. Creditors also avoid lending to those who live far away, because of poorer information, difficulties in securing repayment, and the absence of supplementary social ties. What they prefer is to extend loans to people they know well and those living within their own or nearby villages. By the same token, people are able to exert greater moral claim to loans from wealthy fellow villagers and neighbors in difficult years. Credit also follows the norms of kinship, and wealthy people are more or less obliged to extend small interest-free loans to close kin. They also invariably find themselves subjected to pleas to forgive some of the interest their kinspeople owe on larger loans. Thus credit in Humla, like most economic transactions, is not impersonal, but rather embedded in and conditioned by pre-existing, multiplex social ties.¹¹

Interest rates are another matter: formally never open to concession and subject to different sorts of negotiation. They are, by convention, extremely high. In the years preceding the study they ranged between 25 and 50 percent per year for debts in kind. The precise rate is gauged by several factors. First, the rates are pegged to the lowest levels when debtors agree to perform labor service or provide material items in addition to in-kind payments of interest. Second, interest rates tend to be lower for loans taken in autumn and rise through winter as food becomes more scarce. Third, credit-worthy borrowers can secure lower rates, because their loans present relatively less risk. Fourth, debtors who promise to repay loans taken in cheap, less preferred grains with higher valued grains secure lower interest rates. The interest is lowered in proportion to the difference in value between the two grains.

When creditor and debtor live in the same community, labor service is commonly attached to loans, and the interest rate is reduced proportionately by the amount of labor service pledged. Thus the base rate of 50 percent is reduced to 40 percent for debtors who promise one day of labor service for every *khal* of grain they borrow, and the rate drops to 25 percent for promises of two or three days of labor service per *khal*. Note how closely the reduction in interest follows the value of labor service. A *khal* is equivalent to somewhat more than half a bushel, and a *khal* of buckwheat or millet cost 100 to 120 rupees in 1983 (when U.S. \$1.00 brought approximately Rs. 14.1). At this time, one day of labor service was paid in grain worth between 10 and rupees, depending on the type of work and the gender and age of the laborer. In place of labor service, some debtors pledge items they can produce themselves or gather from the forest, that is, items whose primary cost is labor. Among these are wooden plough tips, hay, resinous kindling, firewood, birch bark, honey, and oil. These accretions to the basic interest rate are termed *garauni* (Nep.) and also described as *gug rin* (Tib. *sgug-rin*), "waiting price", by ethnic Tibetans.

Thus interest rates can vary enormously, as the following hypothetical example shows. One household takes a loan midway through winter without any promise of *garauni* and is charged the maximum rate: 50 percent. At the same time, a second household takes a loan, also without any pledge of labor service or gifts. However, it arranges to take the loan in bitter buckwheat and promises to provide repayment in wheat, a more expensive grain which yields more flour, and therefore is charged the lower rate of 25 percent. Meanwhile, a third household pledges two or three days of labor service for each *khal* borrowed and is assessed interest at the low rate of 25 percent.

Because of these considerations, the various grain loans a given debtor household owes are apt to vary enormously as well. Some debts may be assessed at the highest rate, while others are accompanied by heavy labor obligations or requirements to provide bundles of firewood, hay, and the like. While one debt is owed in wheat, another must be repaid in buckwheat, and yet another calls for repayment of the principal in millet and the interest in barley. Thus accounts of grain debt become extraordinarily complex. The presence of such variations also offers considerable latitude for bargaining over rates and the range of *garauni* attachments. Given that different creditors have different wants and expectations, grain-short households often can exercise a certain choice, taking loans from those whose terms are easiest or whose wants best match their own abilities to pay. The choices become fewer as the winter wears on, because the more flexible, less demanding creditors with the most desirable terms are apt to have their reserves exhausted first. Then grain-short households have to seek out creditors with onerous demands and the highest interest rates. None of this, I should say, is true for cash loans, which are fixed at a flat 25 percent. As we shall see, cash loans are the exception in most villages, although they may have become more prevalent in recent years.

I have described in-kind interest rates as I found them in the early 1980's, and they were equivalent to the traditional rates. Interest rates, however, have not been consistently high. They fell briefly in the mid-1960's, following the enactment of land reform. At that time, people say, creditors became concerned about legal sanctions and kept their rates at a maximum of 20 percent (still twice the legal rate). This situation lasted perhaps half a dozen years, when the rates began rising again. From time to time, individual villages also have attempted to institute their own reforms and have placed ceilings on interest rates. At the outset of the famine of 1983, for example, Jajarkot Panchayat voted to limit in-kind interest rates to 20 percent. A number of creditors initially observed the guideline (although others ignored it). Yet when the famine became severe in spring, the rates universally rose to 50 percent again.

In addition to private lenders, Humla villagers also have access to a government-run agricultural bank. Households which cannot meet their needs may seek a loan from the bank, for which they must pledge agricultural land as collateral. Despite the low interest rates, officially 8 percent, the bank has failed to curb usurious local lending practices. One reason is that officers at the bank (privately) demand large payments--usually 10 percent of the total loan--to approve it. Another reason is that the total loan villagers can take from this bank is limited, in contrast to individual creditors who are willing to make repeated loans over years.

Indebtedness in Humla is so extensive and so deeply entrenched that it has generated its own complex institutions. Thus major creditors commonly appoint loan collectors, because they cannot manage to collect their scattered loans themselves.¹² They tend to employ poorer kinsmen or respected fellow villagers who have minor debts. The loan collector visits debtors as they are harvesting grain in the fields; he is expected to collect and measure repayments and to arrange their transport to the home of the creditor. (Sometimes lenders also stipulate that scribes be hired to record loan disbursements and repayments--charging the costs of this to the debtors). For his work, the collector receives 5 percent of what he returns to the creditor, or has a proportionate amount of his own loans forgiven. In some villages, loan collectors are held responsible for defaults; in other villages they simply must show that they have made all reasonable efforts to secure repayment.

DEFAULTS AND IMPOVERISHMENT

People who repeatedly fail to meet their interest payments may be pressured into handing over usufructuary rights to one or more fields for a period generally lasting from ten to twelve years. Those more seriously in arrears may be forced into partial repayments with valuable household goods, domestic animals, or permanent transfers of land. Some debtors choose instead to become bond servants. Although this has been illegal

since 1951 (Goborieau 1981:135), bond servants still could be found in Humla during the early 1980's. When the problem is less serious, the creditor simply adds unmet interest payments to the principal (Tib. *bedrgyab*; Nep. *syaz*). Thus debtors find their loans growing each year and find themselves falling more and more deeply into debt. For some this leads eventually to bond service or temporary, occasionally permanent, loss of land.

Some of the debtors who have lost their land to usufructuary mortgages have chosen temporary labor migration. Their families move to grain-rich areas of southern Nepal or to regions of India bordering Nepal, where they support themselves by casual labor. They return when it is time to reclaim their land. Others, and those who have permanently lost their lands, have left Humla entirely. The phenomena of temporary and permanent emigration and other consequences of crippling debt can be examined more closely in the following account of the poverty-stricken ethnic Tibetan village of Khalang.

KHALANG: POVERTY AND DEPOPULATION

Khalang is a village particularly damaged by indebtedness. At the time of this study, only one of its twenty-five households was debt-free. Members of this village define a good agricultural year as one permitting interest payments on previous years' loans; nothing better can be expected. Half the village households have, nonetheless, kept their debts within manageable limits. They are able to supplement the grain from their lands with labor in neighboring villages, craft items produced for sale, occasional loans of grain, and seasonal labor migration. Their primary aim in migration is to send away as many able-bodied workers as possible, in order to save limited domestic food stocks for the summer agricultural season.¹³ The other half of the village is essentially insolvent, with households verging on extinction. One of these households is virtually landless, having sold most of its fields to meet delinquent loan payments. Seven have failed to produce heirs for the next generation. Several more simply have stopped cultivating their lands, because they owe the bulk of what they produce to their creditors. Instead they prefer casual labor, paid in grain, for households in wealthier villages. Another household vanished in 1981 when its members left the village secretly, it is said, to escape their crushing load of debt.

Such problems seem to have plagued Khalang for decades, or so figures on the village population suggest. In 1868, the government registered twenty tax-paying households in Khalang; one hundred and thirteen years later that number had increased by only six. This is an atypically low rate of village growth, even for ethnic Tibetans in Humla (Levine 1988: 242). It is even more surprising in light of the frequent household partitioning, for polyandrous marriages often founder in Khalang.

The problems of Khalang may be unusually severe, but they are not unique in Humla. Other villages have lost members because of excessive debt. In an ethnic Tibetan village one day's walk to the east, members of three out of twenty-seven households have emigrated in recent years. One household moved south to Achham (where the migrants later died), the second moved to Darchula, India, and the sole remaining member of the third married a policeman then posted in Humla's district capital and later moved with him to Kathmandu. The fields of these households were divided among their creditors.

My attention was drawn to Khalang because debt had become so severe a problem there and because I thought that an examination of this would provide a fuller picture of the intricacies of local traditions surrounding in-kind loans. I therefore attempted to collect complete information on household indebtedness: the date each loan was contracted, the type of grain or grains borrowed, the type of grain or grains to be repaid, the exact rate of interest on each loan, expected days of labor service per *khal* borrowed, and additional *garauni* obligations. These interviews were completed for five households.

These households are considered somewhat better off than the average, three being classed with those having manageable loads of debt. The problem is that none of the five has any hope of repaying its debts, because of their magnitude and the annual costs of interest. The average rate of interest owed was 34.4 percent--in addition to the days of labor service and payments of goods pledged. In 1982, only two of these households were able to meet their interest obligations. This is partly because 1982 was so poor a year for agricultural production. However, equally bad years have occurred three times in the last nine years, alternating with three "good" and three "mixed" years. Thus a year like 1982 is as much the common experience as anything else. At that time, the average household owed 41.5 *khal* of grain in interest to its creditors. This amount equaled 69.3 percent--more than two-third--of the year's grain production.¹⁴ On average, these households were able to pay back only 12.2 *khal* from their 1982 production--a fraction of what they owed--plus the expected *garauni* (Table 3). Households unable to meet their interest payments found the amount in arrears added to the principal of their loans. Next year, they would owe 34.4 percent interest on their now enlarged loans. All these households, moreover, expected to take out other loans that year, which would further add to their debt burden.

Even without the burden of previous year's loans, these five households would find it difficult to meet their needs from the produce of their own fields. Their average membership is 6.4, and they produced an average of 59.9 *khal* of grain in 1982. A portion of that grain had to be put aside as seed. Data on agricultural practices and productivity in the region suggest that about 5 *khal* would be required. This leaves 54.6 *khal* for food, which had to be divided into 8.6 *khal* of unprocessed grain per household member for the year. Because different grains produce different amounts of processed cereals, one must estimate how many *khal* of

Table 3
Indebtedness in Five Khalang Households, 1982-83

Household	Number of Members	Total Grain Production ^a	payments on Grain Loans	Outstanding Grain Debts
1	11	80.0	13.5	50.0
2	3	32.5	6.2	17.5
3	3	46.2	15.0	14.0
4	5	85.0	14.2	61.0
5	10	56.2	--b	65.0
Mean	6.4	59.9	12.2	41.5

- a. This is given in *khal*.
 b. This household was in the process of making repayments at the time of the interview.

food this provided. Inasmuch as the predominant grains are buckwheat and millet, which lose a great deal of their bulk in processing, and barley, which does not, one can assume a loss of approximately 30 percent, leaving 6 *khal* of processed grain per person. Here we can stop, for this is a fraction of an adult's food needs. The rule of thumb in Humla, and apparently throughout Nepal, is that the average working adult needs two *manas* of husked grain per day, or 18 *khal* per year. In fact, adults probably eat somewhat less--Macfarlane found that the Gurungs he studied ate approximately three-quarters of that amount (1976:164).¹⁵ And although children eat less food, only the youngest could manage on 6 *khal* per year. Because these Khalang households have chronic shortfalls of grain, they also trade, take on casual labor, produce craft items, and emigrate in winter. Even this is inadequate, and almost every household must borrow grain to meet its needs.

Food shortages are a chronic problem throughout Humla, and they increase as the climate grows drier and the altitude higher toward the northern border with Tibet. Ethnic Tibetans, who live in northerly, higher altitude valleys, have the least productive fields, and most try to compensate for this through intensive trading. There are many niches in north-south systems of trade, Rongphug and Gyaling exemplifying the existing diversity in trading specializations. For both, the profits from trade were substantial half a century ago--at the cost of relatively little expenditure of effort. These profits, however, have steadily eroded, because of the closure of trade marts such as Rongphug's, because of the increasing availability of salt in the middle hills and the decreasing availability of grain there due to population pressure, and because of difficulties in acquiring Tibetan salt, which came under government control in the 1960's. Now participation in salt trading

requires intensive efforts virtually year-round. For poorer households with less manpower this has been disastrous, because they are less able to cope with periodic losses from trade and less able to adapt to changes in the trading environment. This makes them even more dependent on their all too few, insufficiently productive fields.

The problem is that grain debts as they are structured in Humla readily create a vicious circle and a downward spiral of impoverishment. Once a household has taken loans, it must devote part of its income to their repayment, which taxes its limited food resources. This makes it likelier to require additional loans, to bridge the ever-growing gap between needs and income. People who are indebted necessarily become dependent upon their creditors. Once a majority of villagers falls into debt, the village becomes easily dominated by wealthy, creditor neighbors. Khalang offers a cogent illustration of how debt produces debt, poverty exacerbates poverty, and both create dependency and political weakness, which further increase impoverishment. Due to its political weakness, Khalang has lost valuable lands to wealthy and more powerful neighbors. In the distant past it lost land to a village of Thakuris, former rulers of the area. In this century it lost land to its near neighbors, occasional affines, and predominant creditors in the village of Gyaling.

To place this situation in fuller perspective we must go back to 1868, the time of the last major land tax registration. At that time, Khalang village had rights to a gently sloping valley located 3,000 feet above the village. At that time, they used the land for summer and autumn pasturage and permitted Gyaling villagers limited access in late autumn for a small fee. Around the turn of the century, Khalang began to reclaim land directly below the pasture and, concerned about the depredations of stray cattle, reduced the amount of pastureland let to Gyaling. This angered Gyaling villagers, who rely heavily on animal husbandry. The fact of their long-term use of the land set the stage for quarrels about the security of such rights and ultimately a legal battle over land ownership.

A case was filed in the local court and proceeded through various suits and counter-suits to higher courts in Jumla, Doti, and finally Kathmandu. The case evolved over a period of four decades, until Gyaling finally won it. Part of the reason Gyaling won is that it is a larger village and had more resources to pay the legal and extralegal expenses that accrue in cases of this kind. Khalang had to meet such expenses as well, but had fewer villagers to share them. Thus the case cost Khalang villagers more, even if the village could pay less. The case eventually bankrupted the village without winning them their fields. At a later date, Gyaling villagers experienced land shortages and put this pasture to agricultural use, moving their herding operations a day's walk away. The parcel of land the two villages fought over include approximately six acres. Some of it is poor in quality and rocky; all of it is high in altitude, but it can grow a single crop of buckwheat each

year. Were the land still held by and evenly divided among Khalang villagers, each would own about quarter of an acre more land. The cultivation of this land could produce another ten to fifteen khal of buckwheat for each household. In a good year, this would yield enough food to feed one adult or pay the interest on loans of the average household discussed above (Table 3).

RELATIONS BETWEEN DEBTOR AND CREDITOR

One might expect relations between debtor and creditor to be characterized by antagonism or a deliberate diminution of social relations, an impression fostered by case studies elsewhere in Nepal. In Humla, one finds debtors resentful to creditors and creditors mistrustful of those who borrow their grain and money. Creditors who charge very high rates of interest or demand heavy *garauni* payments also are subject to highly negative criticism. This, however, is all, perhaps because the fabric of debt in Humla links people with other important common bonds, overarching common interests, and compelling mutual obligations and joins virtually everyone—including caste fellows, neighbors, and kin—within a single network.

Thus far I have described the system of loans largely from the perspective of the debtors. Lenders as well face genuine problems in Humla, due primarily to the insecurity of their loans. The 1964 Land Reform Act increased this insecurity by reaffirming the illegality of traditional interest rates and by instituting provisions to intercept payments on traditional loans (Regmi 1976:207). Nonetheless, these reforms did not have entirely desirable effects. Scholars who have worked elsewhere in Nepal argue that the reforms constricted the availability of credit—partly because creditors found the legal rates to be uneconomical and partly because they feared legal sanctions—and actually forced rates higher. (A.P. Caplan 1972:39; McDougal 1969:55; Regmi 1972:99). It is difficult to draw parallels with the responses to land reform in Humla, because the other analyses focus on cash loans. In Humla, the most serious debts are in grain, and if interest rates on grain loans have remained high, the principal reason was and remains the scarcity of grain. Thus Humla creditors responded to land reform not by withdrawing their grain from circulation (a risky strategy, given that grain is perishable), but by initially conforming to provisions of the act and then, as soon as it seemed safe to do so, raising interest rates again.

Creditors today may be concerned about possible legal action against them for the usurious rates they charge. This may have underlain the reluctance of many to report their profits from loans. Nonetheless, the concern consistently expressed was the risk of debtor default—a long-standing problem. Creditors also cited this risk as one justification for high rates of interest. Clearly it is the poorest debtors and the ones with the heaviest loans who are least likely to repay, whose households are most likely to suffer demise, and whose families are most likely

to emigrate. Creditors can expect little from elderly or ill members of a household approaching demise and they can expect nothing but problems trying to collect loans from a household with multiple obligations to many creditors. Under such circumstances, they may be forced to settle for whatever small amounts they can find. Creditors also complain of people dying with debts still unpaid and their sons and heirs refusing to honor obligations unsecured by formal written documents. This sort of risk may have increased with the imposition of land reform, but it seems unlikely that poor, powerless debtors ever posed much risk of complaints to local courts.

From the creditors' perspective, an insolvent debtor has reneged on a pledge and has taken advantage of the creditor's trust, as well as his hard work and thrift in accumulating a grain surplus. Creditors like to portray themselves as providing a service to the village, for, as they say, villagers depend on their grain-lending activities and would die of starvation without their stores. What they particularly resent are presumed ploys to avoid repayment. Securing repayment is no easy matter either. Creditors have to leave their own work to go to their debtors' villages during the harvest--before the grain can be stored or hidden away. This is one of the reasons major creditors hire loan collectors. The frustration of dealing with recalcitrant debtors has, on occasion, provoked creditors to extreme measures: to physical threats or to removing foods from debtor homes.¹⁶

From an outsider's perspective, however, creditors earn handsome profits from their lending activities, despite occasional problems and periodic losses. They earn up to or the equivalent of 150 percent profit per year, a high return by any standard and particularly desirable in a region with few investment alternatives.¹⁷ Debtors can do nothing but lose from their debts.

NETWORKS OF DEBT

Poverty in Humla may have its roots in inequities in land distribution, but it is amplified by inequities in holdings of grain. Households with large stores of grain can profit enormously from grain lending, while households forced to borrow grain can become entrapped in a vicious cycle of debt, the costs of which annually come to consume a major share of their income.

A closer look at the precise losses and profits incurred from debt show how insidious grain debt is and how few Humla households stand apart from it. We may start with the negative example of Rongphug, the poorest village surveyed. There 81.1 percent of households reported having made payments on existing grain loans during the twelve months preceding the interview. Despite this, 83 percent of households reported having debts left to repay. Most of these debts cluster at the lower end of the range--2,000 rupees or less (Table 4 and 5). However, 2,000 rupees brings quite

a bit of food, even in Humla where grain prices are high. Consider the fact that households making interest payments worth 1,000 rupees per year are sacrificing ten *khal* of buckwheat or millet--nearly one adult household member's food for the year. Sankhagaon and Jajarkot villagers, who have similarly low incomes from agriculture, trade, and wages, follow Rongphug in the severity of their debt. Not surprisingly Daiba, with its high agricultural production and high income, has far fewer debtors.

Table 4
Payments of Interest and Repayments on Grain Loans,
1982-83

		Village Households									
		Rongphug		Sankhagaon		Jajarkot		Daiba		Gyaling	
		%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Total Payments in Rupees ^a											
0		18.9	(10)	34.5	(29)	39.0	(41)	61.4	(51)	80.8	(42)
1	- 999	28.3	(15)	17.9	(15)	42.9	(45)	21.7	(18)	11.5	(6)
1,000	- 1,999	26.4	(14)	32.1	(27)	15.2	(16)	10.8	(9)	1.9	(1)
2,000	- 2,999	15.1	(8)	11.9	(10)	2.9	(3)	2.4	(2)	1.9	(1)
3,000	- 3,999	7.6	(4)	3.6	(3)	0.0	(0)	1.2	(1)	1.9	(1)
4,000	- 6,500	3.8	(2)	0.0	(0)	0.0	(0)	2.4	(2)	1.9	(1)
Number of House- holds Reporting Grain Debts		43		55		64		32		10	
Number of Respondent Households ^b		53		84		105		83		52	
Percent Reporting Grain Debts		81.1		65.5		61.0		38.6		19.2	

- a. This sums up payments on grain loans during the twelve months preceding each survey. Such payments are made in kind, but here are given in rupee equivalents--according to prices prevailing in autumn 1982.
- b. Two Jajarkot and thirteen Gyaling households which were surveyed failed to provide information on their food loans and have been excluded from these calculations.

Table 5
Value of Outstanding Grain Debts, 1983

	Rongphug % (N)	Sankhagaon % (N)	Jajarkot % (N)	Daiba % (N)	Gyaling % (N)
Total Debt in Rupees ^a					
0	17.0 (8)	57.1 (48)	52.8 (56)	79.3 (65)	71.4 (35)
1 - 999	36.2 (17)	23.8 (20)	35.8 (38)	18.3 (15)	2.0 (1)
1,000 - 1,999	27.7 (13)	14.3 (12)	9.4 (10)	1.2 (1)	8.2 (4)
2,000 - 2,999	8.5 (4)	2.4 (2)	0.9 (1)	1.2 (1)	6.1 (3)
3,000 - 3,999	8.5 (4)	2.4 (2)	0.9 (1)	0.0 (0)	8.2 (4)
4,000 - 6,500	2.1 (1)	0.0 (0)	0.0 (0)	0.0 (0)	4.1 (2)
Number of Households with Outstanding Grain Debts	39	36	50	17	14
Number of Respondent Households ^b	47	84	106	82	49
Percent Reporting Outstanding Grain Debts	83.0	42.9	47.2	20.7	28.6

- a. This sums up the total in-kind payments remaining for these households, converted to their autumn 1982 rupee value.
- b. An additional six Rongphug, one Jajarkot, one Daiba, and sixteen Gyaling households failed to provide information on their food loans and have been excluded from these calculations.

Gyaling presents a different situation. To begin, it is far wealthier on average than any other community. As we might expect, it includes few debtors. These few households, however, owe a great deal and owe more on average than do debtors in Rongphug (Table 6). I should note that this result was not skewed by the comparatively high non-response rate, as non-respondents in Gyaling belonged equally to households with large, average, and small landholdings. Instead failure to provide information on debt may be due to simple reticence-unwillingness to discuss what must appear as sharp inequities in a small village of close relatives. The high levels of debt in Gyaling may be, in fact, largely an artifact of season and time. Gyaling was studied in mid- to late summer, when the level of debt ordinarily peaks; moreover, it was studied in the summer of 1983, at the end of a famine year. Because each of these communities was studied for four to six months over a year and a half term of fieldwork (see Note 8); they were reached at different times of year. Sankhagaon was studied in summer and autumn, Rongphug and Jajarkot in winter, and Daiba in autumn and winter.¹⁸ For this reason, figures on debt payments made over the preceding twelve months (Tables 4 and 7) should have greater comparability across communities. The "previous twelve months" incorporates all seasons of the year and for all the communities incorporates a portion of a famine year.

Table 6
Average Levels of Indebtedness, 1982-83

	Village Households				
	Rongphug	Sankhagaon	Jajarkot	Daiba	Gyaling
Mean Payments Made by Debtors Over 12 months	1,703	1,431	749	1,193	1,591
No. of House- holds Reporting Payments of Debts	43	55	64	32	10
Mean Amount of Outstanding Debt	1,382	798	618	562	2,612
No. of Households Reporting Outstanding Debt	39	36	50	17	14

Although comparatively more Gyaling households were reluctant to discuss their expenses and profits from debts, the majority did give accounts of their loans. And these accounts show Gyaling to be predominantly a creditor community. Almost half the households earned grain from outstanding loans during the twelve months preceding the study, and more than half reported profits yet to collect. These loans, I should note, extended through their own and neighboring communities

of similar and different ethnic groups. Among these communities were Khalang, which includes close kin and affines, and Sankhagaon, a community of different ethnic composition. Thus Gyaling differs markedly from the other study communities, where only a fraction of households reported making profits from debt or having as-yet-uncollected debts (Tables 7 and 8).

Table 7
Creditors' Profits From Grain Loans, 1982-83

	Number of Households				
	Rongpuhu	Sankhagaon	Jajarkot	Daiba	Gyaling
Total Profit in Rupees ^a					
1 - 1,999	2	3	1	7	16
2,000-3,999	0	4	1	4	3
4,000-9,999	2	1	2	0	5
10,000-29,999	1	0	2	0	1
30,000-50,000	0	0	1	0	0
Number of Households Reporting Profits from Grain Loans	5	8	7	11	25
Number of Respondent Households ^b	53	84	105	83	52
Percent Reporting Profits from Grain Loans	9.4	9.5	6.7	13.2	48.1

- a. This figures sums up all returns from grain loans over the previous twelve months.
- b. An additional two Jajarkot and thirteen Gyaling households failed to provide information on their food loans and have been excluded from these calculations.

Table 8
Value of Grain Loans Outstanding for Creditor Households, 1983

	Number of Households				
	Rongphug	Sankhagaon	Jajarkot	Daiba	Gyaling
Total Value in Rupees					
1 - 1,999	0	6	5	8	7
2,000-3,999	0	1	3	0	3
4,000-9,999	1	2	1	0	9
10,000-29,999	0	0	1	0	7
30,000-50,000	1	0	1	0	2
Number of Households Reporting Uncollected Grain Loans	2	9	11	8	28
Number of Respondent Households ^a	47	84	106	82	49
Percent of Households With Uncollected Grain Loans	4.3	10.7	10.4	9.8	57.1

- a. An additional six Rongphug, one Jajarkot, one Daiba, and sixteen Gyaling households failed to provide information on their food loans and have been excluded from these calculations.

As one might expect, community wealth and indebtedness are negatively correlated. Gyaling, the wealthiest of the study communities, has relatively fewer debtors and includes the most creditors. Daiba, the community with the second highest income and the largest income from agriculture has relatively little debt and also relatively few creditors. By any accounting, Rongphug is the poorest study community and has the largest amount of debt. Nonetheless, all the communities, no matter how poor, have a few creditors. Rongphug includes one extremely wealthy household which reported outstanding loans worth 36,000 rupees. Despite Jajarkot's poverty, there are two creditor households which earn extraordinary amounts of grain from debts (Table 8). One household is so rich that it owns two dozen storage pits, from which it annually doles out grain to poor members of its own village and nearby Rongphug. Rongphug people also seek loans from the handful of households in their own

community with grain surpluses and from another, wealthy ethnic Tibetan community a day's walk to the north. It is worth noting that much of the grain which creditors provide in loans was collected from debtors' interest and repayments. Ironically, poor households may find themselves borrowing the very grain they themselves produced. One should not forget either that wealthy creditor households cite uncollected debts worth several times the average annual income of their community.

LOANS IN CASH AND IN KIND

In most of Humla, cash loans were less common, at least through the early 1980's. Thus proportionately fewer households reported repaying or paying interest on cash loans than they did on grain loans in Rongphug, Sankhagaon, Jajarkot, and Gyaling. In Daiba, eight more households reported outstanding cash than grain debts, but vastly more households reported repaying grain than cash debts over the preceding twelve months. Cash loans generally appear to motivate a comparatively lower and slower rate of repayment. In all the villages, substantially more households cited outstanding cash debts than repaid them in 1982-83 (Tables 9 and 10). Perhaps debtors worry less about being dilatory in repaying cash loans because the interest rates are lower. Perhaps the low rates of repayment are due to the newness of the loans or because many of the larger ones come from the agricultural bank, which extends longer term loans and is more lenient about repayment schedules. Equally likely, cash is viewed as less consequential than grain, and cash loans are treated more casually--I certainly found it difficult to secure repayment of the (interest-free) cash loans I made to villagers. Since I became aware of this pattern only after I left the field, I failed to survey informants about it.

Table 9
Payments of Interest and Repayments on Cash Loans, 1982-83

	Number of Households				
	Rongphug	Sankhagaon	Jajarkot	Daiba	Gyaling
Total Payment in Rupees					
1 - 999	2	1	3	4	1
1,000-1,999	1	0	1	0	1
2,000-2,999	1	0	1	0	0
3,000-3,999	0	0	1	0	0
More than 4,000	0	1	0	0	0
Number of Households Repaying Cash debts	4	2	6	4	2
Number of Respondent Households ^a	33	84	104	83	52
Percent Repaying Cash Debts	12.1	2.4	5.8	4.8	3.8

- a. An additional twenty Rongphug, three Jajarkot, and thirteen Gyaling households failed to provide information on repayments of cash debts and have been excluded from these calculations.

Table 10
Value of Outstanding Loans in Cash, 1983

	Number of Households				
	Rongphug	Sankhagaon	Jajarkot	Daiba	Gyaling
Total Debt in Rupees					
1 - 999	12	13	20	20	4
1,000-1,999	3	5	4	1	3
2,000-2,999	2	4	1	1	1
3,000-3,999	3	0	3	0	1
4,000-6,499	3	1	1	3	0
6,500-9,999	1	0	0	0	0
10,000-19,999	0	0	1	0	0
Number of Households with Outstanding Cash Debts	24	23	30	25	9
Number of Respondent Households ^a	42	84	105	83	49
Percent Reporting Outstanding Cash Debts	57.1	27.4	28.6	30.1	18.4

- a. An additional eleven Rongphug, two Jajarkot, and sixteen Gyaling households failed to provide information on cash debts and have been excluded from these calculations.

In Humla, cash generally has less immediacy than grain--which is, after all, food--and has less salience as an index of value. Even today, profits from agriculture and trade are calculated in grain, and wealth still is measured in stores of grain and property productive of grain, not of cash. Grain remains the major medium of exchange in the region. Until the 1970's, the only money accepted was silver, either old Indian rupees or Tibetan coins, which have intrinsic value. Paper money is seen as relatively dispossable, because it cannot be directly consumed, and there is little to be bought with it in Humla. At famine times it becomes particularly clear how useless money is, as I can well attest. There then is no food that money can buy. Thus the standard of wealth and value is grain, which is the staff and stuff of life and can be loaned out at greater rates of interest than can cash.¹⁹

If borrowing cash remains comparatively rare in most of Humla, this no longer is the case in Kharkot. Here cash loans have come to exceed grain loans both in their prevalence and amounts (Table 11). Kharkot is a Chettri community like Jajarkot and approximately the same size. One difference between the two is that Kharkot villagers have more land. What is even more important now, they live near Humla's District capital and have benefitted enormously from the recent expansion of government services there. While people of every village hold government jobs, they are few and mostly employed locally, for example, as schoolteachers or workers in the small health posts scattered around the region. Kharkot people, however, live a brief walk from the district capital, which means they can commute to work daily. This is why approximately two-thirds of Kharkot households have one or more members working for the government. Many hold menial positions, although literate villagers have somewhat better employment and a few young men with a high school education have desirable white-collar jobs. Thus the average Kharkot household earned 5,891 rupees from wages in 1982-83: principally cash from government employment. By contrast, households in Jajarkot--the community with the next largest earnings from wages and casual labor--reported an average 1,811 rupees from this (Table 2). I should note that government jobs provide more than a salary advantage. They also confer year-round opportunities to purchase subsidized rice. Such transactions are accomplished with cash.

Other studies which have focused on problems of debt in Nepal have shown it to be concentrated among lower-ranking ethnic groups and castes. This is not the case in Humla, as the above data show. The poorest, most debt-ridden community is Rongphug, while the richest community and the one in which creditors predominate is Gyaling. Both are ethnic Tibetan. Perhaps ethnic Tibetans are more likely to experience major shifts in their economic fortunes because they rely heavily on trade, which is so volatile in this region. Among the other groups, wealth traditionally depended on agriculture, which is comparatively more stable. Daiba now holds and in the past held better land than Sankhagaon and thus has less debt. Kharkot has more land than Jajarkot and has been better-off for a considerable time; now it is markedly more prosperous because of government employment. One can only conclude that debt follows land and income, which are moderated by ethnicity or caste in complex, sometimes contradictory ways. Ethnicity is correlated with the way a community makes a living and where it is located--higher up the mountain valleys near Tibet or in a valley bottom where rice can be grown. Conditions were advantageous at one period of time, however, may prove disastrous in the next. Thus high caste Hindus once had access to the best valley bottom lands. Now that such lands and locations pose major disadvantages, the balance of agricultural wealth has altered, and other factors intervene.

Table 11
Indebtedness in Kharkot, 1982-83

	Payments on Grain Loans		Outstanding Grain Loans		Payments on Cash Loans		Outstanding Cash Loans	
	%	(N)	%	(N)	%	(N)	%	(N)
Total Payment in Rupees								
0	82.5	(66)	73.8	(59)	63.8	(51)	51.2	(41)
1 - 999	17.5	(14)	26.2	(21)	26.2	(21)	27.5	(22)
1,000-1,999	0.0	(0)	0.0	(0)	7.5	(6)	12.5	(10)
2,000-2,999	0.0	(0)	0.0	(0)	0.0	(0)	2.5	(2)
3,000-3,999	0.0	(0)	0.0	(0)	2.5	(2)	1.2	(1)
4,000-6,499	0.0	(0)	0.0	(0)	0.0	(0)	1.2	(1)
6,500-9,999	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)
10,000-20,000	0.0	(0)	0.0	(0)	0.0	(0)	3.8	(3)
Proportion of Indebted House- holds	17.5	(14)	26.2	(21)	36.2	(29)	48.8	(39)
Number of Respondent Households ^a	80							

- a. One other Kharkot household was surveyed, but failed to provide information on its current debts.

The system of debt in Humla does not depend on exploiting the lower castes either. Most high caste people are too poor to take financial advantage of others in this way. For that matter, there are few low caste people of whom they could take advantage. Among the 473 households surveyed in these villages only 31 were of occupational castes. As elsewhere in Nepal, almost all are extremely poor. Until recently they held no land and earned their living through their traditional occupations and casual agricultural labor. They are heavily indebted, but less seriously than the people of Rongphug (Table 12). Their grain debts do not seem much worse than those of Jajarkot people, and their cash debts not much worse than those of Kharkot people (Table 12). This picture of dual indebtedness may be due to comparable factors, for 12 of the occupational castes live in Kharkot, where cash debts are quite common, and 14 live in Jajarkot, where grain debts are quite common.

Table 12
Indebtedness Among Low Caste Households, 1982-83

	Payments on Grain Loans		Outstanding Grain Loans		Payments on Cash Loans		Outstanding Cash Loans	
	%	(N)	%	(N)	%	(N)	%	(N)
Total Payment in Rupees								
0	36.7	(11)	38.7	(12)	70.0	(21)	33.3	(10)
1 - 999	46.7	(14)	45.2	(14)	23.3	(7)	53.3	(16)
1,000-1,999	13.3	(4)	9.7	(3)	6.7	(2)	10.0	(3)
2,000-2,999	3.3	(1)	3.2	(1)	0.0	(0)	0.0	(0)
3,000-3,999	0.0	(0)	3.2	(1)	0.0	(0)	3.3	(1)
4,000-6,500	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)
Proportion of Indebted House- holds	63.3	(19)	61.3	(19)	30.0	(9)	66.7	(20)
Number of Respondent Households ^a	30		31		30		30	

- a. One untouchable household failed to provide information about its grain repayments in 1983; another household failed to provide information about its cash debts.

Debt in Humla is at base a practical problem of inequality within and between villages. The traditional, high interest rates which grain-short households still have to accept enrich creditors, impoverish debtors, and thus widen the gap between rich and poor. Once a household has fallen into a downward spiral of debt, it becomes nearly impossible to rise out of it. As in other regions in Nepal, the sole way out of debt may be work outside the community (Caplan 1970:5; Hitchcock 1966:18). Other authors have explained pervasive indebtedness by land scarcity, and land scarcity certainly does characterize Humla. The problem however, is more deeply rooted than this. Traditional systems of lending discourage productivity among the poor, who must divert a large part of their agricultural income toward meeting prior debt obligations. In the end this may create nothing other than an unproductive recycling of grain throughout the community--a recycling which leaves the most grain in the hands of the rich, who use much of it only to lend out again.

NOTES

1. Poffenberger, for one, argues that needs for cash expanded due to government requirements for taxes paid in cash and growing demands for consumer goods (1980:66). However the government acknowledged the rarity of cash and permitted in-kind assessments in remote areas (Regmi 1976:138). People in some regions continue to pay taxes in grain, even today (Humphrey 1985:57). The parallels between such explanations of agricultural indebtedness in Nepal and early accounts of similar phenomena in India are worth noting (see Kessinger 1974 on India).
2. It is not possible to examine the relationship between levels of indebtedness and land scarcity or inequities in land distribution. All available data, including data collected under the aegis of the 1964 Land Reform Act, are compromised by landowners' attempts to undervalue their holdings and debtor's failures to declare their loans. (This occurred in spite of the Act's stated aim of moderating their debt burdens).
3. It has been argued that the government saw Hindu settlement as particularly desirable in an unstable, sensitive border area and used this settlement to convert land held under traditional communal tenure (*kipat*) to state control. This offered the additional advantage of higher revenues (Caplan 1970:56-59, Regmi 1976:92-93).
4. Despite such inequities and the power of headmen in the past, we find anthropologists describing Limbu class distinctions as "superficial" (Jones 1976: 72) and the population as "traditionally undifferentiated" (Caplan 1970: 174). Surely this apparent paradox merits closer attention.

5. It is difficult to judge whether this holds true for mortgage holders outside the village cluster as well, because Caplan presents no ethnic breakdown of the larger region's population (Caplan 1970: 17, 101).
6. His Majesty's Government estimated grain production in the Karnali Zone to be 15,171 metric tons in 1983/84 and grain requirements to be 48,876 metric tons, producing a shortfall for the region of 33,705 metric tons--a remarkable deficit of 141 kilograms of grain per person (Nepal 1986:16, 115).
7. The choice of site depends on migrant characteristics. Strong young men may go to India, where high-paying road or other construction work is available. Entire families may migrate to warmer regions of Nepal, where husbands, wives, and adolescents can find familiar sorts of casual labor in small agricultural villages.
8. The research was carried out in Humla District between September 1982 and April 1984 and was supported by grants from the National Science Foundation and the Population Council. I studied the ethnic Tibetan communities and coordinated concurrent research in Bura and high caste Hindu communities. Thanks are due to my co-researchers, Netra B. Tumbahangfe, Tshewang B. Lama, and Lok B. Rawat. I also must express my thanks to Dr. Harka B. Gurung for his help in identifying resources critical to this study.
9. Tibetan and Nepali versions of the ethnographic survey and questionnaire were prepared for use in all the study communities. The questionnaire was administered to all the households in the smaller villages and to a random sample of households in the larger villages.
10. Figures on agricultural production from Daiba are somewhat higher than they might otherwise be, because Daiba was surveyed last, and villagers reported on the 1983 harvest. For the other communities, figures on agricultural production derive principally from the far less favorable 1982 harvest.
11. Similarly, Caplan (1970:172-73) found that wealthy Limbu were able to negotiate cheaper loans and were preferred by other Limbu as mortgagers of land, because of expectations of a continuing social relationship and multiple kinds of social support.
12. Loan collectors are known by ethnic Tibetans as *khaitheg* (*khasthegs*) or *nyawa* (*gna'ba*) and by Nepali speakers as *jamani* (*jajmani*).
13. Villagers who migrate to the hills of Nepal bring little home to show for their months of work. Those who take better-paid jobs in India may return with spices, cooking pots, cloth, and so on, goods which are expensive or unavailable at home.

14. Compare this figure to the 27.6 percent of annual agricultural produce owed by the category of "marginal" farmers in more favored regions of Nepal (Nepal 1980:156).
15. Macfarlane estimated that the average adult male needs approximately 210 kilograms of husked grain per year (1976:168). A recent government study in Nepal which had access to more precise estimates of grain caloric values came up with a similar figure: 225 kilograms of cereal food per adult per year (Agricultural Products Services Center 1982: 37).
16. Note that the use of private coercion was perfectly legal until the twentieth century (Gaborieau 1981:142-43).
17. Firth argues that the different prices of grain between the time of greatest need and the following harvest essentially cancel out such increments in repayment (1964:30-31). For a Humla example, in autumn 1982 wheat cost 140 to 160 rupees per khal. By the following spring the price had risen to 200 to 240 rupees--one and a half times the price in autumn. However by next autumn the price had dropped to its former low level. At this time debtors were obliged to pay 15 khal for every 10 borrowed, and creditors then could lend out those 15 khal for a return of 22.5 khal the following year.
18. This may explain why only Gyaling shows substantially more villagers reporting outstanding debts than having repaid debts during the preceding twelve months.
19. As Humphrey has argued for the Lhomi of eastern Nepal, here we essentially have a barter economy, in which people "cannot afford to keep money and in which money may cease to function as an index of value and itself becomes an item bartered" (1985:48).

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RESEARCH NOTE

Contribution to the Ethnobotany of the Tamangs of
Kathmandu Valley

Purushottam Shrestha

INTRODUCTION

Nepal is a multiracial and multilingual country where various linguistic and ethnic groups are knit together by bonds of nationality and cultural harmony. The Tamangs are not only one of the important ethnic minorities but also a major Tibeto-Burman speaking community of Nepal. They maintain a belief that they did originally come from Tibet and as they do speak 'Bhotia' tongue and follow 'Lamaism'; erstwhile they were called as 'Bhote'¹ meaning highlander or Tibetans (Bista, 1980:52). The Tamangs live in the surrounding hill sides of Kathmandu valley as well as 'Lekh'² portion of the Rasuwa, Nuwakot and Sindhupalchok districts lying North, North East and North West of Kathmandu proper. They are seen in the streets of Kathmandu and adjoining towns carrying a large basketload of wild plant products. The men are characteristically dressed in loinclothes and black tunics with short sleeved woolen jackets or 'Bakhoo' in winter and a Khukri tucked in their waistband, while women are dressed in colorful as well spotted blouse and gown and a sickle or Hasiya tucked in their waistband.

The Kathmandu valley which is the political, cultural and commercial centre of Nepal comes under central midland region of Nepal. It enjoys monsoon climate and subtropical and temperate type of vegetation represented by prominent floristic elements like Schima, Chestnut, Chirpine, Oak, Laurel, Rhododendron etc. It consist of three principal towns and several villages inhabited by various ethnic communities including the Tamangs. Of the total population of Nepal, the Tamang constitute about 3% of which the Kathmandu valley consists of nearly 7% comprising 13,619; 13,041 and 7,594 population in Kathmandu, Lalitpur and Bhaktapur districts respectively (HMG, 1987:47). Regarding the circular settlement pattern of Kathmandu valley the central core is inhabited by the Newars which is followed by other ethnic tribes like Brahmins, Chhetris etc. while peripheral forest area is inhabited by the Tamangs.

From long past the Tamangs who are traditionally 'traders' are supplying various domestically essential commodities like bamboo

baskets and carpets, ropes, broons, firewood, timber, woolen blankets and jackets as well as wild edible mushrooms, young bamboo and fern shoots and even goats to the populace of Kathmandu valley (Bista 1977: 48). It indicates that they are 'miner' of the forest area and largely subsist their living on vegetational resources. But in the recent time due to widespread deforestation, governmental control of forest area and the air of modernity in town area; their age long bussiness of selling raw or finished wild plant products is declining as a result they are getting impoverished socio-economically, and however, they have managed to retain their traditional culture.

The Tamangs of Kathmandu valley area commonly practise agro-silvo-pastoral system. Their agricultural production consists of mainly Maize, Millet, Wheat, Barley, Potato and Rice to some extent and they depend upon wild plants for vegetables and other domestic items. Thus local forest plays important role in fulfilling their various basic needs like food, firewood, timber, fertiliser, fodder, fibre, medicines etc. They are efficient craftsmen in making bamboo baskets, woolen blankets and jackets as well as carpentary and religious 'Thangka' paintings (Bista 1977:50). Actually the Tamangs' life gravitates around the forest and retains primeaval forest culture rooted in the old beliefs, taboos, folk lores and traditional attitudes (Khadka et.al, 1982:109).

The Tamangs' villages are situated in the fringe of forest area and are generally out of modern facilities like electricity, motorable roads, safe drinking water, health posts and post offices. Though they lie in the vicinity of capital towns they are virtually in remote area. This physical state of living combined with economic poverty and forest based traditional way of life have enriched them ethnobotanically. But this valuable treasure of ethnobotanical information accumulated through many generations and verified by their self experiences is in jeopardy. The causal problems are like; declining forest area, increasing acculturation process of Tamang boys, and still high rate of illiteracy which rather facilitates oral traditions thereby hindering the documentation of ethnobotanical information. Regarding the previous record of works relevant to present one Manandhar (1980, 1982) carried out ethnobotanical observation on different tribes mainly the Tamangs of Rasuwa and Nuwakot districts and reported 43 medicinal plants from the former and 85 wild plants comprising 46 medicinal plants, 30 food plants, 14 each for fodder and of miscellaneous usage from the latter district. Bhandary and Shrestha (1985) conducted ethnobotanical investigation on various ethnic tribes including the Tamangs of Kathmandu valley and reported 67 poisonous plants. It indicates that ethnobotanical work particularly on the Tamangs of the Kathmandu valley has been minimally carried out. This study in brief tries to fulfil this lacuna.

The field work was carried out in seven selected villages of Kathmandu valley predominated by the Tamangs; Godavary, Lele, Manichur, Panchmane, Sundarijal, Thankot and Tokha (Fig. 1) between April-October 1986.

The present work was carried out to document the ethnobotanical information of the Tamangs of Kathmandu valley area with special reference to the wild plants useful in meeting their various daily basic needs.

METHODOLOGY

The field surveys were carried out from an anthropological field technique involving direct interview and discussion with key informants including the 'Bonpo' or local witch doctors. The gathered ethnobotanical data were authenticated by cross questionings with other Tamangs of the same or other localities by referring the same questionnaire and plant samples as well as by relevant reference and herbaria consultation.

Herbaria of all collected plant samples pledged to be useful were made in a scientific manner and their identification were made by tallying herbaria and citing relevant literature on flora at the "National Herbarium and Plant Laboratories" Godavary, Lalitpur.

As Firewood:

Alnus nepalensis, *Castanopsis indica*, *C. tribuloides*, *Eurya acuminata*, *Lyonia ovalifolia*, *Lithocarpus elegans*, *Myrica esculenta*, *Myrsine capitellata*, *M. semiserrata*, *Pinus roxburghii*, *Pyrus pashia*, *Quercus glauca*, *Quercus semecarpifolia*, *Rhododendron arboreum*, *Sarcococca coriacea*, *Schima wallichii*.

As Fodder:

Alnus nepalensis, *Arundinaria falcata*, *Brassiopsis hainla*, *Buddleja asiatica*, *Castanopsis tribuloides*, *Cleyera ochracea*, *Eurya acuminata*, *Ficus auriculata*, *Ficus clavata*, *Ilex doniana*, *Ligustrum confusum*, *Machilus duthiei*, *Myrsine semiserrata*, *Sarcococca coriacea*, *Saurauia nepaulensis*.

As Timber:

Alnus nepalensis, *Betula alnoides*, *Borassus Sp.*, *Castanopsis indica*, *C. tribuloides*, *Dendrocalamus hamiltonii*, *Lithocarpus elegans*, *Lyonia ovalifolia*, *Myrsine capitellata*, *M. semiserrata*, *Pinus roxburghii*, *Quercus glauca*, *Q. semecarpifolia*, *Schima wallichii*.

As Fibre or Cordage:

Agave americana, *Daphne bholua*, *Eulaliopsis binata*, *Girardinia palmata*, *Hibiscus manihot*, *Wickstroemia canescens*.

As for Miscellaneous use:

- a) Basketry - *Arundinaria falcata*, *Dendrocalamus hamiltonii*
- b) Brooms - *Phyllanthus parvifolius*, *Thysanolaena maxima*
- c) Carpentry - *Quercus glauca*, *Q. semecarpifolia*
- d) Dye - *Rubia manjith*
- e) Fleas repellent - *Boenninghausenia albiflora*
- f) Green manure - *Eupatorium adenophorum*
- g) Incense - *Artemisia vulgaris*
- h) Leech repellent - *Zanthoxylum armatum*
- i) Religious Plants - *Buddleja asiatica*, *Oroxylum indicum*

ENUMERATION

The plants are enumerated in alphabetical order according to their botanical names. The Nepali name of the plants and their corresponding local Tamang names are also provided. The family names are given in brackets.

As food items:

- As Medicine:

Sprains - *Gonostegia hirta*

Acomogonum molle (D. Don.) Hara (Polygonaceae)

N. (Nepali name) Thotne, T. (Tamang name) Pangyun.
Young shoots are consumed as vegetable or pickle
and are also used to sell in markets.

Agaricus campartris L. ex Fries (Agaricaceae)

N. Gobre chyaw, T. Kaparsyamo
The fructification or whole plant is cooked and eaten as vegetable
as well as used to sell in markets.

Agave americana (Amaryllidaceae)

N. Kettuke, T. Kettuke.
Fibres extracted from leaves are used in making
ropes and strings.

Ageratum conyzoides L. (Compositae)

N. Gandhe Jhar, T. Ghyusi
Paste of leaves is used in clotting blood from
fresh cuts and wounds.

Alnus nepalensis D. Don. (Betulaceae)

N. Uttis, T. Kyangsing
Wood is used as timber and firewood while leaves
as fodder.

Amaranthus spinosus L. (Amaranthaceae)

N. Lunde, T. Bhangar
Young shoot is taken as vegetable after proper
boiling.

Ardisia macrocarpa Wall. (Myrsinaceae)

N. Damaiphool, T. Paralparmi
Ripe berries are eaten raw.

Artemisia vulgaris L. (Compositae)

N. Titepati, T. Chenjen
Dried shoots are commonly used as incense during
Shamanism and death rites.

Arundinaria falcata Nees (Gramineae)

N. Nigalo Tusa, T. Maa
Young shoots are consumed as well sell in market as vegetable while
stems are used in basketry and leaves as fodder.

Bauhinia variegata L. (Leguminosae)

N. Koiralo, T. Koiralomendo

Flowers are used as pickle as well as sold in Markets.

Berberis asiatica Roxb. ex DC. (Berberidiaceae)

N. Chutro, T. Pijar

Ripe fruits are eaten fresh.

Bergenia ciliata (Haw.) Sternb. (Saxifragaceae)

N. Pakhanbed T. Pakhanbed

Decoction of root is used as an antidiarrhoeal.

Betula alnoides D. Don (Betulaceae)

N. Saur, T. Bhirsing

Wood is used as timber.

Boenninghausenia albiflora (Hk.f.) Meisn. (Rutaceae)

N. Dampate, T. Niburjhe

Fresh shoot is employed as fleas repellent

Borassus Sp. (Palmae)

N. Jagar, T. Dholchhing

Stem is used as poles in hedgerow, 'Tagaaro' or bar making but not used in house construction.

Brassiopsis hoinla (Buch.-Ham.) Seem. (Araliaceae)

N. Seto Chuletro, T. Ghenglamdo

Leaves are used as fodder.

Buddleja asiatica Lour. (Loganiaceae)

N. Bhimsenpati, T. Phabasing

Leaves are used as fodder as well as in religious worships.

Castanopsis indica (Roxb.) A. DC. (Fagaceae)

N. Dhale Katus, T. Chingar

Wood is used as timber and firewood while seeds are consumed raw as well as used to sell in markets.

Castanopsis tribuloides, (Smith) A. DC. (Fagaceae)

N. Musure Katus, T. Kyarbar

Wood is used as timber and firewood while leaves as fodder.

Chenopodium album L. (Chenopodiaceae)

N. Bethe, T. Bethu

Yound plant is cooked as vegetable.

Cleistocalyx operculatus (Roxb.) Merr. and Perry. (Myrtaceae)

N. Kyamuno, T. Sernemerne

Ripe fruits are eaten fresh and also sould in markets.

Colocasia Sp. (Araceae)

N. Jaluko, Ban Karkalo, T. Taya

Leaves and inflorescence are used as vegetable after proper boiling.

Coriaria nepalensis Wall. (Coirariaceae)

N. Machhaino, T. Bhojinsi, Jakubaku

Ripe fruits are eaten but in excess causes dizzness.

Cuscuta reflexa Roxb. (Cuscutaceae)

N. Aakash beli, T. Taarghey

Infusion of stem is taken internally to cure Jaundice.

Daphne bholua B. - H. ex D.Don. (Thymelaeaceae)

N. Kagajpate, Lokta, T. Kagajpate

Bark of stem is used in making ropes and strings.

Dendrocalamus hamiltonii Nees and Arn. ex Munro (Gramineae)

N. Tamabaans, T. Krin

Young shoots are used as vegetable. Wood is largely used in house construction as raftars, beams and poles as well as baskets, mats and also used as firewood. Leaf is used as fodder avoiding pregnant livestock.

Dioscorea alata L. (Dioscoreaceae)

N. Ghar Tarul, T. Ghimteme

Its tubers which are consumed after thorough roasting or boiling to supplement the food are cultivated and are also used to sell in markets.

Dioscorea bulbifera L. (Dioscoreaceae)

N. Gittha, T. Pemegittha

Tubers are consumed after thorough roasting or boiling.

Dioscorea deltoidea Wall. ex Kunth.)Dioscoreaceae)

N. Vyakur, T. Ridme

Tubers are consumed as substitute of food after through roasting, boiling or cooking.

Dioscorea esculenta (Lour.) Burkill (Dioscoreaceae)

N. Suthani Tarul, T. Temsur

Tubers are consumed as food after through roasting or boiling.

Diplazium stolickiae Bedd. (Aspidiaceae)

N. Kalo Nyuro, T. Bhandhengan

Tender shoots which are commonly eaten as delicious vegetable after boiling are also used to sell in markets.

Dryopteris cochleata (Don.) C. Chr. (Aspidiaceae)

N. Kuthurke, T. Dhengan

Tender shoots are consumed as vegetable after boiling and are used to sell in markets.

Dryotharium boryanum (Willd.) Ching (Aspidiaceae)

N. Dauthe, T. Dhengan

Tender shoots are consumed as vegetable after boiling and are used to sell in markets.

Eleagnus infundibularis Momiyama (Elaeagnaceae)

N. Madilo, T. Rangeltingo

Ripe fruits are edible.

Elsholtzia flava Benth. (Labiatae)

N. Ban Silam, T. Mranja

Dry powdered seeds are used as curry and the oil extracted from the seeds is said to be edible.

Eriobotrya dubia Decne. (Rosaceae)

N. Jurekaphal, T. Hadekarbijar

Ripe fruits are eaten fresh.

Equisetum arvense L. (Equisetaceae)

N. Kurkure, T. Middho

Paste of root is applied in wounds caused by thorns so as to expel the pus formation.

Eulaliopsis binata (Retz.) C.E. Hubbard (Gramineae)

N. Babiyo, T. Salki

Long needle like leaves are used in making ropes and strings.

Eupatorium adenophorum Spreng. (Compositae)

N. Banmarajhar, T. Tirimna

Leaves which are not generally browsed by livestock are used in mulching or in making green manure.

Eurya acuminata DC. (Theaceae)

N. Jhingane, T. Tengar

Leaves are used as fodder.

Ficus auriculata Lour. (Moraceae)

N. Timila, T. Mago

Leaves are used as fodder.

Ficus clavata (Moraceae)

N. Bedulo, T. Lamogo

Leaves are used as fodder.

Ficus lacor Buch.-Ham. (Moraceae)

N. Kabro, T. Nakkali

Foliar buds are used in making curry.

Ficus sarmentosa B.-H. ex. I.E. Smith (Moraceae)

N. Ban Timila, T. Nogu, Mogo.

Ripe fruits are said to be edible

Fragaria vesca Hook. f. (Rosaceae)

N. Bhuikaphal, T. Pokhrepolong

Ripe fruits are eaten.

Galansoga parviflora Cav. (Compositae)

N. Chitlange ghans, T. Naulina

Tender shoot is cooked and consumed as vegetable.

Gaultheria fragrantissima Wall. (Ericaceae)

N. Dhasingare, T. Chyanjun

Ripe fruits are eaten.

Girardinia palmata (Forsk.) Gaud. (Urticaceae)

N. Allo, T. Pachher

Fibres extracted from bark of stem is used in making threads, ropes and strings while young shoot is eaten as vegetable, after thorough boiling.

Gonostegia hirta (Bl.) Miq. (Urticaceae)

N. Mas lahare, T. Pingur

The paste of root is used as antidandruff shampoo. The sticky substance oozing from cut stems is mixed up with red soil and used in smearing winnowing tray or 'Nanglo' as an adhesive. The mixture of its root with those of Nettle and *Osyris wightiana* is applied to relieve sprained bones of man and livestock preferably young ones.

Hibiscus manihot L. (Malvaceae)

N. Ban Nalu, T. Nalo

Fibres extracted from stem barks is used in making cordage.

Houttuynia cordata Thumb. (Saururaceae)

N. Gande, T. Kaalmo

Young shoots are cooked as vegetable.

Ilex doniana DC. (Aquifoliaceae)

N. Puale, T. Puhale

Leaves are used as fodder.

Leacanthus peduncularis (Royle) Wedd. (Urticaceae)

N. Khole Saag, T. Syodhap

The whole shoot is cooked and eaten as vegetable.

Ligustrum confusum Dcene. (Oleaceae)

N. Kanike, T. Kurunga

Leaves are used as fodder.

Lithocarpus elegans (Blume) Hatus (Fagaceae)

N. Arkhoula, T. Bhaldung

Wood is used as timber while leaves as fodder.

Lyonia ovalifolia (Wall.) Drude (Ericaceae)

N. Angeri, T. Dhomsin

Wood is used as timber and firewood as well as in charcoal

making. Leaves are said to be highly poisonous to livestock and infusion of leaves is applied on skin to cure scabies.

Machilus duthiei King ex. Hook. (Lauraceae)

N. Kaulo, T. Loba
Leaves are used as fodder.

Mahonia napaulensis DC. (Berberidaceae)

N. Jamanemandro, T. Kerpa, Kerpai
Ripe fruits are eaten.

Marasmius sp. (Agaricaceae)

N. Thokrechyau, T. Gharsyamo
Whole plant or fructification is cooked and eaten as vegetable and also used to sell in markets.

Melia azadirach L. (Meliaceae)

N. Bakaino, T. Jugu
Ripe fruits are taken internally to expel roundworms.

Melothria sp. (Cucurbitaceae)

N. Ban kakro, Kukur karno, T. Langai
Fruit pulp is taken internally to cure boils of tongue.

Myrica esculenta Buch.-Ham. ex. D. Don (Myricaceae)

N. Kaphal, T. Bhaikarbijar
Ripe fruits are eaten and used to sell in markets.

Myrsine capitellata Wall. in Roxb. (Myrsinaceae)

N. Setikath, T. Syungan
Wood is used as timber and firewood.

Myrsine semiserrata Wall. in Roxb. (Myrsinaceae)

N. Kalikath, T. Kramo
Ripe fruits are edible, wood is used as timber as well firewood and leaves are used as fodder.

Ophioglossum reticulatum L. (Ophioglossaceae)

N. Jibre sag, T. Jibre dhap
Leaf is cooked as vegetable.

Opuntia dillenii Haw. (Cactaceae)

N. Nagphani, T. Bhoksepuchho
Half of the seeds of the fruit is grinded and
taken internally as a diuretic.

Oroxylum indicum (L.) Vent (Bignoniaceae)

N. Tatelo, T. Lamendo
Paste of seed is applied to cure boils of lips
and tongues while flowers are commonly used in
worships as well in Shamanism.

Osbeckia nepalensis Hook. (Melastomaceae)

N. Rato Chulsi, T. Lemblang
Ripe fruits are eaten.

Osyris wightiana Wall. ex. Wigh (Santalaceae)

N. Nundhiki, T. Jhyalala
Young leaves are boiled, dried and powdered
so as to use as substitute of tea leaves.

Phyllanthus parvifolius B.-H. ex D. Don (Euphorbiaceae)

N. Khareto, T. Chhetrephya
The dried stick is bundled and used
as a broom.

Pinus roxburghii Sarg. (Pinaceae)

N. Rani Salla, Khote Salla T. Thamsingdong
Wood is used as timber while seeds are edible after
through roasting and the needle leaves are
used in making green manure.

Pleurotus circinatus Fr. (Agaricaceae)

N. Kanne chyau, T. Ghusyasyamo
The whole fructification is eaten as a vegetable
after thorough washing and cooking with traces of
Nepalese pepper or 'Timmur'. It is also used to sell in
markets.

Potentilla fulgens Wall. (Rosaceae)

N. Bajradanti, T. Ghobarchhe
Paste of root is used to cure toothache.

Pyracantha crenulata (D. Don) Roemer (Rosaceae)

N. Changharu, T. Baderu
Ripe fruits are eaten.

Pyrus pashia Benth.-Hook. ex D. Don (Rosaceae)

N. Mayel, T. Pana
Ripe fruits are eaten.

Quercus glauca Thunb. (Fagaceae)

N. Banjh, T. Sulsing
Wood is used as timbrer, firewood and in making
agricultural implements like 'Halo'. Leaves
are used as fodder.

Quercus semecarpifolia Smith (Fagaceae)

N. Khasru, T. Bhena
Wood is used as firewood and in making
charcoals as well as in carpentry and in
making handle of knives. Leaves are extensively
lopped for fodder.

Rhododendron arboreum Sm. (Ericaceae)

N. Lali Guras, T. Paramendo
Wood is used as firewood as well as in making
good charcoals. Flowers are sucked for honey
and also pickled.

Rhus javanica L. (Anacardiaceae)

N. Bhaki Amilo, T. Tibra
Powdered seed is taken with curd as
an antidiarrhoeal.

Rubia manjith Roxb. ex Fl. (Rubiaceae)

N. Majitho, T. Yathabchhe
The dye extracted from its root is used in
dyeing wools.

Rubus ellipticus Smith (Rosaceae)

N. Ainselu, T. Polong

Ripe fruits are eaten as well as used to sell in markets.

Rumex nepalensis Spreng. (Polygonaceae)

N. Halhale, T. Haledo

The paste of the basal portion of the stem, which is yellowish is applied on skin to cure eczema.

Russula vesca Fr. (Lactariaceae)

N. Bhut chyau, T. Kasyamo.

The whole fructification is used as vegetable after cooking properly spiced with the powder of Nepalese pepper.

Sarcococca coriacea (Hook.f.) Sweet (Buxaceae)

N. Phitiphiya, T. Phitiphiya

Wood is used as firewood and leaves as fodder.

Saurauia nepaulensis DC. (Saurauiaceae)

N. Gogan, T. Angyur

Ripe fruits are edible and leaves are used as fodder.

Schima wallichii (DC.) Korth. (Theaceae)

N. Chilaune, T. Kyasing

Wood is used as timber and firewood.

Scurulla elata (Edgew). Danser (Loranthaceae)

N. Ainjeru, T. Ainjera

Ripe fruits are eaten.

Scutellaria scandens D. Don (Labiatae)

N. Charpate, T. Charpatedhyago

The juice extracted from leaves is used in fresh cuts and wounds to clot the blood.

Smilax menispermoides A. DC (Smilacaceae)

N. Kukur daino, T. Naigre

Young shoots are eaten raw or cooked as vegetable.

Solanum nigrum L. (Solanaceae)

N. Jangali Bihin, T. Ghodejhe

Pulp of ripe fruits is applied on forehead and temples to relieve from headache.

Solanum torvum Swartz (Solanaceae)

N. Thulo Bihin, T. Ghyagarpuchho

Dried fruits are burnt with mustard oil on a spoon placed inside a 'Chilim' of smoking 'Hookah' and the resulting vapour is allowed to direct towards the infected or aching tooth and a little smoke is said to cure the toothache.

Syzygium cumini (L.) Skeels (Myrtaceae)

N. Jamun, T. Jhambu

Ripe fruits are edible and also used to sell in markets.

Swertia angustifolia B.-H. ex D. Don (Gentianaceae)

Decoction of root is commonly used as antipyretic. Due to this property the plant is collected and sold in markets.

Thysanolaena maxima (Roxb.) Kuntze (Gramineae)

N. Amriso, T. Thyabgo

Bundle of inflorescence is used to make broom which are used in sweeping purposes and are also used to sell in markets.

Tinospora cordifolia Miers (Menispermaceae)

N. Gurjo, T. Gurju

Infusion of stem is used as a stomachic and also to check blood mixed urination.

Urtica dioica L. (Urticaceae)

N. Sisnu, T. Polo

Tender shoots are collected by means of tongues and is used as vegetable after thorough boiling. The mixing of its boiled shoot with livestock feed or 'Kudo' is said to increase lactation of livestock.

Viburnum mullaha B.-H. ex D. Don (Caprifoliaceae)

N. Molo, T. Asyangpolo

Ripe fruits are edible.

Wickstroemia canescens (Meisn.) C. A. Meyer (Thymelaceae)

N. Phurkepat, T. Pat

The fibres extracted from the bark of stem is used in making cordage.

Zanthoxylum armatum DC. (Rutaceae)

N. Timmur, T. Prumo

Powdered fruits is taken internally as stomachic and also used as curry as well as an antimicrobial spice in mushroom cooking. The paste of fruit is applied in feet as a leech repellent.

Zizyphus incurva Roxb. (Rhamnaceae)

N. Hadebayer, T. Namun

Ripe fruits are eaten fresh.

The result indicated that out of total 100 species recorded, altogether 53 spp. are found to be used as food items, while 19 spp. as medicine, 16 spp. as firewood, 15 spp. as fodder, 14 spp. as timber, 6 spp. as fibre or cordage and 13 spp. for miscellaneous use like green manure, carpentry, religious plants, etc. The highest proportion of recorded species i.e. 53% are treated as food plants, comprising 25 spp. as fruits, 24 spp. as vegetable, 4 spp. each as food and pickle or curry and 1 sp. as local substitute for market tea. In total raw or finished products of 54 wild plants comprising 16 different species of vegetables and fruits including 3 spp. each of mushroom and ferns along with firewoods, bamboo baskets and mats are used to sell frequently at markets of Kathmandu and Patan as a source of income. The use of 4 spp. of *Dioscorea* in supplementing the main dish and use of some less known spp. like: *Galansoga parviflora*, *Lecanthus peduncularis* as vegetable and *Ligustrum confusum*, *Myrsine semiserrata*, and *Scurulla elata* as a source of wild edible fruits are notable. The application of many weedy species including the spiny *Amaranthus spinosus*, *Girardinia palmata* and

Urtica dioica imply the degree of extreme poverty on the one hand and rational utilisation of vegetational resources on the other. As for the medicinal plants, most Tamangs still have strong belief in healing property of vegetable drugs and words of 'bonpo', or witch doctors. They use 19 different plants species as a remedy to 15 types of common diseases like diarrhoea, dysentery, toothache, jaundice as well as in frequent cuts and wounds. The usage of *Bergenia ciliata*, *Swertia angustifolia* are well known in other tribes also while the remedial application of *Ageratum conyzoides*, *Cuscuta reflexa*, *Opuntia dillenii* and *Solanum torvum* by the Tamangs is rather uncommon but promising. The treatment pattern of *Solanum torvum* seeds in curing toothache practised by the Tamangs coincides with the Khasi and Jaintia tribes of Meghalaya, India (Kharkongor and Joseph, 1982). The possible medicinal use of many such less known but promising wild plant species warrant detail chemical analyses and subsequent standardisation for their greater mass utility. As for firewood, fodder and timber the local people use virtually every sort of easily accessible wild plants however they emphasize on easily chopable, quickly drying and large diametered spp. for firewood, 'galactogogus' or high milk yielding fodder spp. and strong, tall cylindrical tree spp. for timber. The species like *Alnus nepalensis*, *Castanopsis tribuloides*, *Lyonia oralifolia*, *Myrsine capitellata*, *Pinus roxburghii*, *Quercus glauca*, *Q. semecarpifolia*, are highly sought after for the above purposes. In miscellaneous usage the application of *Eupatorium adenophorum* a noxious weed, and wasteful needles of *Pinus roxburghii* in making green manures is an illustrative traditional practice towards sustaining the productivity of soil and less dependance upon imported chemical fertiliser by proper utilisation of local vegetational resources. The prevalence of Tamang terminology like 'Jhe' for herbs, 'Sing' or 'Dong' for trees, 'Mendo', for flowers, 'Dhap' for semi-aquatic plants, 'Syamo' for mushrooms and 'Dhengan' for ferns, indicate the close tie of Tamangs' life style and culture with the local vegetational resources.

As the Tamangs are heavily dependant upon the forest products, so they are liable to greater destruction of forest as they do not practice afforestation, display myopic behaviour and think the forest products as free gift of nature like soil and water. In this background the saying that "A Tamang is happy with an axe, a pot and a wife" appear relevant (Khadka et al 1982:409). This stresses to the urgency of providing environmental education and techniques of forest management to the local Tamangs accompanied by rise in village economy by more forest and agro based cottage industries, more off-farm employment and income generating activities.

CONCLUSION

The documentation of ethnobotanical information on 100 wild plant species in the present work indicate that the Tamangs of Kathmandu Valley are ethnobotanically rich and they have close

affinity with the local vegetational resources in order to meet their various daily basic needs like; food, fodder, medicine, timber, fire-wood, fibre etc. as well as in earning money by selling raw or finished wild plant products. It sheds light on the considerable impact of local forest in the socio-economic and cultural spheres of the Tamangs' community and vice versa. The ethnobotanical observation shows that the Tamangs use some less known but potential plants species like *Galansoga parviflora*, *Lecanthus peduncularis*, *Scurulla elata* for food while *Cuscuta reflexa*, *Opuntia dillenii*, *Solanum torvum* for medicine and these species require necessary chemical analyses for their proper exploitation. In this context, the crude ethnobotanical information assists in the crucial task of evaluating rural science and technology and tapping the economic potentialities of vegetational resources as well forest based traditional cottage industries thereby contributing to fulfill the basic needs of rural people in a substantial way at the same time maintaining the environmental balance.

NOTES

1. In local dialect 'Bhot' indicates northern Trans-Himalayan zone generally between 3000m-4000m: in the inward and outward side of greater-Himalayan range.
2. In local dialect 'Lekh' indicates the upper reaches of the Mahabharat hill range of Midland Nepal generally between 2000m-3000m. In the middle hills Nepal most population resides between 1000m-2000m and the altitudes of about 3500m and 4000m are regarded as the upper limit of arable agriculture and forest zone respectively.

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Book Review

The Other Side of Polyandry: Property, Stratification and Nonmarriage in the Nepal Himalayas, 1987. Sidney Ruth Schuler. 196 pages. A Westview Press Publication in the Series, Women in Cross-Cultural Perspective; Boulder Colorado. US \$ 22.00.

The Dynamics of Polyandry: Kinship, Domesticity and Population on the Tibetan Border, 1988. Nancy E. Levine. 309 pages. University of Chicago Press, Chicago. US \$ 17.95.

Polyandry continues to be a subject of serious study by anthropologists living and working among Tibetan speaking peoples. Given the opportunity to be with Tibetans, few westerners can overlook it. And I myself took considerable interest in the subject when I lived with Tibetans from Dingri who migrated into Nepal and settled there as refugees 30 years ago. After that experience, returning to the West, I found Europeans and Americans highly curious about my experience in close proximity to polyandrous marriages. How a single woman is married to several men excites the imagination of monogamous people tremendously. We have no difficulties with the idea of a man with more than one wife, so common across the world, including Nepal. That hardly warrants comment, even by feminists. In contrast, a woman accomodating several husbands, constantly calls for 'special' explanations. Our contrasting curiosity about these customs is itself worthy of some reflection. But that is not the subject of the two books under review here.

Both books are not really about polyandry itself but about a whole range of social relationships--population dynamics--in a society whose normal system of marriage is polyandry--the Tibetan style. In that respect these studies are more sophisticated than any early book on the subject. These examine conditions surrounding polyandry, the results and/or covariables of this unique living arrangement. The analyses deal with household patterns, labor management, inheritance rules.

Both studies are by experienced fieldworkers who conducted their research in northwest Nepal. Sidney Schuler, author of *The Other Side of Polyandry*, worked in a region, Chumik, comprising 12 villages, lying in Muktinath and Kagbeni Panchayats in 1978 and 1979. Nancy Levine, who wrote *Dynamics of Polyandry*, worked in four connected Tibetan-speaking settlements in Humla in two periods, 1978 and 1983. Dr. Schuler and Dr. Levine represent the high level of commitment by women researchers to work in Nepal's remotest regions. They also express the increasing degree of sophistication in demography, particularly developments that take account of women's and girl's

lives. Of two books under review, schuler's is more directly concerned with how women live and how they are viewed and used. It is not for this reason alone however that I find it the more insightful and worthwhile study.

Schuler begins chapter 1 with this paragraph:

"The sun withdraws suddenly. A baby wakes and cries, two other children run off, and the women pull their shawls up around their heads and gather their wool and spindles. The wind howls and whips its way through the narrow streets of the walled village, slinging sheets of dust in its path. The women move in closer and twist their shawls more tightly around themselves as the dust hits them, drowning their words and filling their lungs. As the wind lets up they move apart and resume speaking." (p.8)

Further on, under her account of 'Six Women', schuler records a song one Chumik friend sang to her:

"Handsome as they may be
A person has no need
For boots he does not fancy
Handsome as they may be
A person has no need
For books that do not fit
Child of the gods though he may be
A woman has no need
For a man she does not like." (p. 16)

Thus we are introduced to the society of Chumik and its women, and the exploration of why so many of these women do not marry. Schuler's account is not all poetry. There are plenty of meaty demographic data, both in tabular and anecdotal form. The work includes well written case reports and relevant theoretical comparisons.

I quote the passages above to give you something of the intimate flavour of Schuler's presentation, a taste of the rich, colorful resources she so skillfully draws together. I want to make this a short review because I hope readers will get this book and read the whole thing themselves. It is an excellent book.

Rereading Schuler for the purpose of this review, I am reminded why I wanted to write about. I still think it is by far the more essential of the two studies. Anyone interested in demography must read it. *The Other Side Of Polyandry* is published by the now well established Westview Press, only 196 pages, yet costs more than US \$ 20.

This book throws new light on the dynamics of Tibet-speaking cultures by focusing not on why and how polyandry works, but on a

related feature of this culture- the high incidence of non-married women. These are divorced or separated or widowed women as well as nuns and women who never married. Even with a lower polyandry rate than that observed by Goldstein in Limi (CNS 1977, 4:2) the Chumik people of Schuler's study have a higher rate of non-marriage. Closely examining her data on polyandry and other features of this social system, the author found polyandry alone cannot account for the high incidence of women living unmarried. All Tibetan populations experience this, in sharp contrast with Hindu peoples where the marriage rate is almost 100%. (see table 3.2 p. 49). These Nepalese women of Chumik have a non-marriage rate of 22-23% for women aged 35 and over and 28% for women aged 45 and over. By any standard this is extremely high, and I think the author is right to look for explanations not in South Asia, but at what was called the 'European system': Europeans had a lower marriage rate in the first half of this century and the 19th century. The work of demographer J. Hajnal (1965 "European Marriage Patterns in Perspective" in *Population in History*: eds. Glass and Eversley, Chicago: Aldine) is a major theoretical starting point for Schuler. Hajnal looks at production figures, labor needs, the influence of the industrial revolution and conscious attempts to limit family size in Europe.

Keeping her attention focused on women, this researcher notes their input into the labor force and listens to people who constantly cite the importance of a daughter's labor. She also notes the low status of women in general in Tibetan society (a fact I too observed but which few commentators on this society will acknowledge). The association between a women's low status here and her lack of access to inheritable property is taken account by Schuler. She also notes status differences among villages of different 'gyudpa', another feature usually denied by general observers of Tibetan society (but which Levine, below, also describes in some detail). These are not insignificant factors. And Schuler's conclusions based on their coincidence are convincing. She demonstrates (chapter 5) how normal access to property through marriage works to keep women's status low. 'Inmarriage', she shows, functions as a means of preserving social and economic inequalities. She also illustrates how women lowest in status here are left unmarried, a process which reinforces social inequality at the systemic level. The practices of polyandry, primogeniture and non-marriage become the traditional means by which families avoid division of land but also "enable them to hold on to the labor of grown children and siblings. The nonentitled and unmarried provide an important source of labor for the landed as permanent, low status family members, semi-independents in separate households or as hired laborers.... the labor of unmarried women becomes particularly important at certain phases in the family's cycle...."

These are the kinds of issues Schuler considers when she asks the question "what is it about Tibetan societies that produce:

marriage pattern more akin to those of preindustrial Western Europe than contemporary South Asia?"

Nowadays, most travellers to the Himalaya are aware of the economic success by Tibetan peoples in Nepal. Their rise to economic heights through their flourishing carpet industry is a source of envy and perhaps jealousy as well. In Tibetans' traditional environments in the dry Tibetan plateau and in the harsh, low-yield regions of the northwest, one wonders at how they survive and seem to prosper. Reading schuler's book, a new question arises: Is this success based on the management of unmarried women's labor, first Tibetan women and now Tamang women? Is it based on their strategies to retain status differences among themselves? Sidney Schuler, with this more honest view of Tibetan society, backed by hard statistical data, taking account of women in the system, opens up a range of new thoughts and questions for consideration.

Nancy Levine's the second book under review here, is best summarized by its subtitle, *Kinship, Domesticity and Population on the Tibetan Border*. Hers is a study of community and kinship in the British tradition of anthropology in which Levine was trained. It is a thoroughly researched work, one of the few monographs about distant Humla, and she offers us a wealth of demographic material presented in statistical form, with plenty of household counts, age tables and observations from 2 periods of fieldwork, 1973 and 1984. With such rapid changes occurring across Nepal, the inclusion of 1984 data is particularly useful. Professor Levine also gives us numerous, although briefer than Dr. Schuler's cases of individual experiences.

Noting her abundance of demographic tables and numerous short case examples it appears Levine left no person unaccounted, no story untold. These kinds of detailed household and family reports are valuable for the complexity they reveal about a society. We who live in cities are highly conscious of the multiple layers of issues and the changes enmeshing us. But we often gaze at those mountain village silhouettes and reflect on the simplicity of those farmers' lives. Any such romantic view we may hold about the Humla people dissolves when we read Levine's report about these four Humla villages. (The same applies to the Chumik people described by Schuler.) We are struck by the complexities of those women's and men's lives. They have such a range of rules guiding everyday behavior; they express layers of historical adjustments; they embody compromises and defences.

Levine builds up a sociological picture of this complexity by beginning with a broad view of Humla social life, and moving in closer and more deeply as she proceeds to describe the dynamics of human relations. She reviews clan identities and the ranking system among freedmen and *trongba* (landholding) villagers, and adjunct villagers. She devotes considerable attention to these

different ranks with their interdependences and she refers back to this in her later analysis of household economy with its polyandrous arrangements.

As in so many Tibetan societies, the economy is labor-intensive yet labor remains in short supply. Even ex-slaves in Humla seem to continue their dependency relations with former owners; they still supply the labor needs of wealthier households.

Later chapters focus on household arrangements in view of rules of polyandry. Polyandry is normal among the majority of houses in this Humla study. But houses are constantly partitioning and moving through other changes. Adjustments are required to accomodate those breaks and still maintain desirable village population levels, to foster economic co-operation, and assure a labor supply. Levine's book is primarily about how people maintain their communities and economic levels in the face of the particular arrangements defined by polyandrous marriages and the factors moving people towards partition. The society she describes is, like the Chumik of Muktinath, a most dynamic social system.

Both authors refer repeatedly to several articles on population dynamics by their fellow American anthropologist Melvin Goldstein and his work ought to be read by anyone pursuing the subject. Readers may also take note of a wide-circulation publication of Goldstein's that appeared in 1987. It is a general discussion of polyandry, "When Brothers Share a Wife" in *Natural History Magazine* (March 1987). Goldstein draws data from a wide range but the accompanying photos by Tom Kelly are from Humla.

Essentially, all these scholars agree on the basis of this uniquely Tibetan system. Polyandry is a cultural ideal and it brings prestige and dignity to a household. It also serves the economic interests of a household as the corporate economic unit and as means of succession in this society. My earlier work led me to the same conclusions as these three authors so all of us are in general agreement about why Tibetans persist with this way of living. We have yet not eliminated the mystory from polyandry; and governments (China, Tibet and India and Europe/USA) whose social systems are different and who somehow find this repelling, will continue to discourage it. In the meantime we see how these new books, particularly Schuler's, bring yet another level of refinement to the study of human dynamics.

I want to comment, finally, on the cost, availability and writing standard of these books. The Chigaco University Press product by Levine is cheaper although a hundred pages thicker. It will also be more readily available in Nepal. Yet, The Westview publication by Schuler, at more than \$20. and less well advertised, is by far the better written book. Although printed in a kind of lithographed typescript rather than the more professional

hardtype that makes Levine's book so handsome to look at, Schuler's command of language is better and so her book is the more readable. She is less repetitious than Levine, her tabular records seem more efficient, and she recounts conversations and people with more color and feel.

It is curious that Westview, not the prestigious Chicago University Press, produced what I feel is the higher standard book.

- Barbara Nimri Aziz